The Week In Engineering and Construction

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Past year was the biggest in construction history

Contract awards for heavy construction approached six billion dollars, nearly fifty percent above previous record set in 1940.

In response to the nation's needs for a greatly expanded industrial capacity to meet defense (and now war) requirements, the construction industry in 1941 broke all records for volume of work handled. Contract awards reported by Engineering News-Record climbed to $5,868,699,000, which is 47 percent above the previous all-time high made in 1940. This is so-called heavy construction, and when the small jobs and residential construction are added in, the year's construction total is $11,396,000,000. Thus passes the record of 1928 whose total of $10,580,000,000 has stood for so long.

Every section of the country participated in the gain in engineering construction, but the greatest percentage gains were recorded in the West, the Far West group being up 72 percent and the group known as West of the Mississippi being up 91 percent. The latter group also had the largest total, $1,345,177,000, followed by the South and Middle Atlantic groups.

Building awards high

The building classification accounted for two-thirds of the year's total construction, public building at $2,785,58,000, private industrial at $497,176,000 and private commercial at $485,683,000, making up the building total. The public buildings projects were largely of industrial nature and as such, of course, included much besides the building structures, such as roads, water supply, sewage plants, etc.

Waterworks contracts exceeded 1940, while sewage plants fall slightly below. Highways were also down from the 1940 totals. Many types of defense projects are included in the unclassified grouping, and this increased nearly 80 per cent over the preceding year.

In the earthwork and waterway classification, the 1941 total of $245,221,000 exceeded the previous year by about $11,000,000, but street and road work showed a drop of almost $96,000,000 to $582,847,000 in 1941.

Residential construction estimated for 1941 totaled 615,000 new units, which was the largest volume of this type of work for any year since 1928. It exceeded the 1940 volume by 14 percent. In the field of public housing, construction for defense workers and military forces accounted for approximately 75 percent of the total.

Use of construction materials paralleled the record volume of work, and fabricated structural steel shipments for the first eleven months of 1941 were up 52 per cent, compared to the corresponding figure for 1940. Cement shipments were up 28 percent for the same period of comparison.

Lumber shipments for the first 10 months of 1941 were 13 percent over 1940. Production was expected to reach 30 billion board feet for 1941.

A comprehensive review of all phases of construction statistics and records for 1941 will appear in the Annual Review Number of *ENR* next week (Jan. 15).

Wide World Photo

Alabama marks its highways to guide air cadets

An innovation in highway directional markers, at least as they relate to national defense, has been instituted by the Alabama State Highway Department. As illustrated, markers indicating distance and direction to nearest airport are being painted on the state highways as a guide to aviation cadets and others.

This particular marker reads "Ala.—5—Tuscaloosa 23 Mi.," which of course means state highway No. 5, distance 23 miles to Tuscaloosa airport. The lettering is sufficiently large to be seen at normal flying heights.

Chris J. Sherlock is state highway director of Alabama.

Six new district offices for Corps of Engineers

The War Department announces that six new district engineer offices have been established by the Corps of Engineers in effecting the transfer of the former construction division, Quartermaster Corps, to the Corps of Engineers. The new offices are located at Arlington, Va., (under the Office of the Chief of Engineers); Atlanta, Ga., (South Atlantic Division); Columbus, Ohio, (Ohio River Division); Salt Lake City, Utah, (South Pacific Division); San Antonio, Tex., (Southwestern Division); and Panama, Canal Zone, (under the Office of the Chief of Engineers).

Consolidation of the activities of the QMC construction division and those of the Corps of Engineers has now been effected, following the actual transfer of the entire construction division to the Office of The Chief of Engineers.

The Washington headquarters has been regrouped as follows: Office of the Chief of Engineers, New War Department Building, 21st St. and Virginia Ave., N.W.; Assistant Chief of Engineers in Charge of Construction, New Railroad Retirement Building, 4th and C Sts., S.W.; Repairs and Utilities Branch, Municipal Center Building, 4th St. and Indiana Ave., N.W.

Division office headquarters are as follows: for the North Atlantic Division, 1216 Federal Office Building, 90 Church St., New York, N. Y.; South Atlantic Division, Main and Laurel Sts., Richmond, Va.; Great Lakes Division, 419 Federal Building, Cleveland, Ohio; Upper Mississippi Valley Division, 829 U. S. Courthouse and Customhouse, St. Louis, Mo.; Lower Mississippi Valley Division, Vicksburg, Miss.; Missouri River Division, 1201 Davidson Building, 10 E. 17th St., Kansas City, Mo.; Ohio River Division, 1420 Enquirer Building, Cincinnati, Ohio; North Pacific Division, 500 Pittock Block, W. 9th and Stark St., Portland, Ore.; South Pacific Division, 1200 Balfour Building, 351 California St., San Francisco, Cal.; Southwestern Division, 16th Fl., Cotton Exchange Bldg., Dallas, Tex.; Caribbean Division, 150 Broadway, New York, N. Y.

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Power facilities at Bonneville stepped up

Anticipating prompt passage of a $30,000,000 appropriation now pending in the Senate and its final approval by the President, Paul J. Raver, Administrator of Bonneville Power Administration, has ordered an immediate step-up of Bonneville power transmission and substation construction to increase available power to industries in the Pacific Northwest.

The $30,000,000 fund is strongly supported by OPM chief William S. Knudsen, and represents the minimum needed to provide adequate power for defense.

Mr. Raver states that applications from defense industries for more power are being received at the rate of two or three per day, and that plans are being formulated to meet the necessary power demands in advance of actual plant location. Orders have been given to strengthen western Oregon and Washington transmission lines to assure uninterrupted power to existing strategic defense industries now located west of the Cascades. A further strengthening of the Willamette Valley system also has been ordered so that the Administration will be in a position to supply power south through interconnections in event of damage to vital California generating plants. By building a second line to Eugene, Ore. to permit rapid interconnection with the California-Oregon Power Co. and other systems, it will become possible for Bonneville to take over their loads while they take over loads farther south.

British Combine

Demolished to stop the German drive in the Ukraine

As the Russian offensive gains momentum all along the Eastern front, the effective work of Russian saboteurs in slowing down the drive of the Germans in the Ukraine during the drive of last fall becomes increasingly significant. Typical of the vast destruction wrought to major construction and engineering projects is the bridge illustrated above near Kiev.

Price rise on cranes and power shovels rescinded

A 5 percent increase in prices for cranes and power shovels manufactured by the Koehring Co., Milwaukee, Wis., a prominent manufacturer of heavy construction and mining equipment, has been rescinded at the request of Administrator Henderson the Office of Price Administration.

The price advance, which had been announced in October, was to have been effective on business accepted after Jan. 1, 1942. Request for its withdrawal was made by OPA after careful study of operating records furnished by the company.

Commenting upon the company's compliance with his request, Administrator Leon Henderson said: "The action of the officials of the Koehring Company in cancelling its proposed price increase is tangible evidence that American business can be relied upon to cooperate in the common interest."

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Highway funds for fiscal year 1942 allocated to highway departments

Federal Works Agency will restrict its approval to projects certified as essential to national defense by federal defense agencies

Allocation of $97,500,000 of federal-aid highway funds for expenditure on the federal-aid system during the fiscal year 1943 (beginning July 1, 1942) was made to the states on Dec. 31 by Assistant Federal Works Administrator Baird Snyder III acting for Administrator Philip B. Fleming. Also allocated was $17,062,000 for secondary roads and $19,500,000 for elimination of grade crossings. The amounts going to each state is given in the accompanying table.

In making allocations Mr. Snyder stated that it will be the policy of the FWA to restrict approvals of highway work to projects approved as essential to national defense by federal defense agencies.

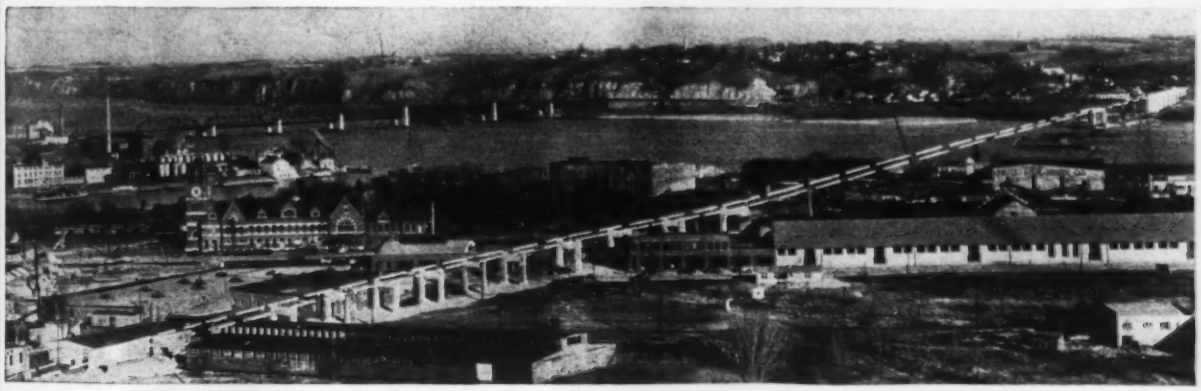
Available funds

Allocation of $163,500,000 to the states and federal agencies for expenditure on the federal-aid system and for other road purposes during the fiscal years 1942 and 1943 was approved by Congress in August 1940. That total is made up of $100,000,000 for the federal-aid highway system, $17,500,000 for secondary roads, $20,000,000 for grade crossings, $10,000,000 for forest roads, $1,500,000 for roads on public lands, $4,000,000 for park roads, $7,500,000 for parkways, and $3,000,000 for roads in Indian reservations.

At the close of 1941, over $100,000,000 of the federal-aid funds authorized for the current fiscal year had not been taken up by the states, due in large part to delays caused by priorities and defense operations. In addition, Congress included in the ten billion supplemental defense appropriation, passed after war was declared, $74,600,000 for access roads and contract authorization for $50,000,000 more, presumably for work that will not get underway until after July 1.

Congress passed a defense highway bill in November authorizing an expenditure of $150,000,000 on access roads and $50,000,000 for work on the strategic highway network, half to be allocated to the states on the regular federal-aid basis and half to be spent at the discretion of the FWA. In signing the bill the President expressed disapproval of this latter provision and asked that it and some others be repealed. Congress took no action on that recommendation, but no allocation of $25,000,000 assigned to the states has been made by the Public Roads Administration.

State	Regular Federal Aid	Secondary or Feeder Roads	Elimination of Grade Crossings
Ala.	$2,083,755	$364,657	$405,128
Ari.	1,435,456	251,205	129,583
Ark.	1,709,471	299,157	336,460
Calif.	3,989,896	698,232	798,434
Col.	1,793,222	313,814	255,449
Conn.	629,283	108,549	164,002
Del.	487,500	85,313	97,500
Fla.	1,431,426	250,499	299,694
Ga.	2,517,196	440,509	495,487
Ida.	1,238,004	216,651	165,774
Ill.	3,947,786	690,863	1,012,936
Ind.	2,409,852	421,724	503,499
Ia.	2,494,254	436,494	538,416
Kan.	2,524,344	441,760	485,674
Ky.	1,853,318	324,331	358,327
La.	1,479,614	258,932	317,974
Me.	866,360	151,613	133,885
Md.	832,207	145,636	197,436
Mass.	1,310,162	229,278	388,101
Mich.	3,028,945	530,065	651,739
Minn.	2,702,831	472,995	526,346
Miss.	1,780,492	311,586	314,073
Mo.	2,963,919	518,686	578,946
Mont.	2,020,796	353,639	262,388
Neb.	1,991,271	348,472	333,931
Nev.	1,275,386	223,193	97,500
N. H.	487,500	85,313	97,500
N. J.	1,273,680	222,894	376,647
N. M.	1,622,549	283,946	177,246
N. Y.	4,821,071	843,688	1,330,156
N. C.	2,387,356	417,787	514,993
N. D.	1,499,001	262,325	299,447
Ohio	3,520,305	616,053	818,984
Okla.	2,272,612	397,707	442,035
Ore.	1,649,132	288,598	228,533
Pa.	4,087,815	715,368	1,089,534
R. I.	487,500	85,313	97,500
S. C.	1,346,362	235,613	298,209
S. D.	1,577,778	276,111	253,551
Tenn.	2,112,542	369,695	382,507
Tex.	6,313,862	1,104,926	1,098,295
Utah	1,123,730	196,653	129,761
Vt.	487,500	85,313	97,500
Va.	1,844,177	322,731	374,250
Wash.	1,585,782	277,512	303,889
W. Va.	1,096,603	191,905	264,466
Wis.	2,400,972	420,170	483,930
Wyo.	1,245,987	218,048	131,879
D. C.	487,500	85,313	97,500
Hawaii	487,500	85,313	97,500
Puerto Rico	493,438	86,352	165,506
Total	$97,500,000	$17,062,500	$19,500,000



Substructure complete for Mississippi River Bridge at Dubuque

With the substructure work complete, the construction program for the highway bridge across the Mississippi River from Dubuque, Iowa, to East Dubuque, Ill., contemplates completion of the project in the early fall. Steel fabrication is well advanced on the entire superstructure and erection will begin soon.

The bridge will have a steel superstructure supported on concrete substructure with a 24-ft. concrete roadway and a 5-ft. sidewalk. Total length of the project is 7,000 ft. and the distance between abutments is 5,760 ft. Across the main channel is a 1,539-ft. three-span continuous tied arch of novel design, with 845-ft. central span and 347-ft. side spans. The remainder of the superstructure will be of deck girder and deck beam spans varying in lengths from 44 to 181 ft. Piers, bents, and abutments are of concrete on wood piles.

The Iowa State Highway Commission and the Illinois Division of Highways are participating with the City of Dubuque Bridge Commission in providing funds for construction. Design and supervision of construction is being handled by Howard, Needles, Tammen & Bergendoff, in cooperation with the engineers of the Iowa State Highway Commission and of the Public Roads Administration. The substructure contract was held by Ferd J. Robers Construction Co. and LaCrosse Dredging Corp., under personal direction of P. C. Peterson. The superstructure contract is held by Bethlehem Steel Co. Contracts for the entrance plaza at each end of the crossing are to be let next spring. Total cost of the project is about $3,600,000.

Sliding an outfall sewer into the ocean

Outfall sewer construction is one of the specialty jobs in civil engineering practice. There is no such thing as a "standard method" of design or installation, but some techniques have been successfully developed to the point where they may find useful application elsewhere.

The procedure employed by Thomas Proctor & Sons, contractor on a recent outfall for the seaside borough of Deal, N. J., resulted in speedy completion of an otherwise difficult job. The problem here was to install a 17½-in. diameter wrought iron pipeline for a distance of 1,100 ft. into the ocean. Three weeks after work was started, the 57 tons of pipe were laid in place.

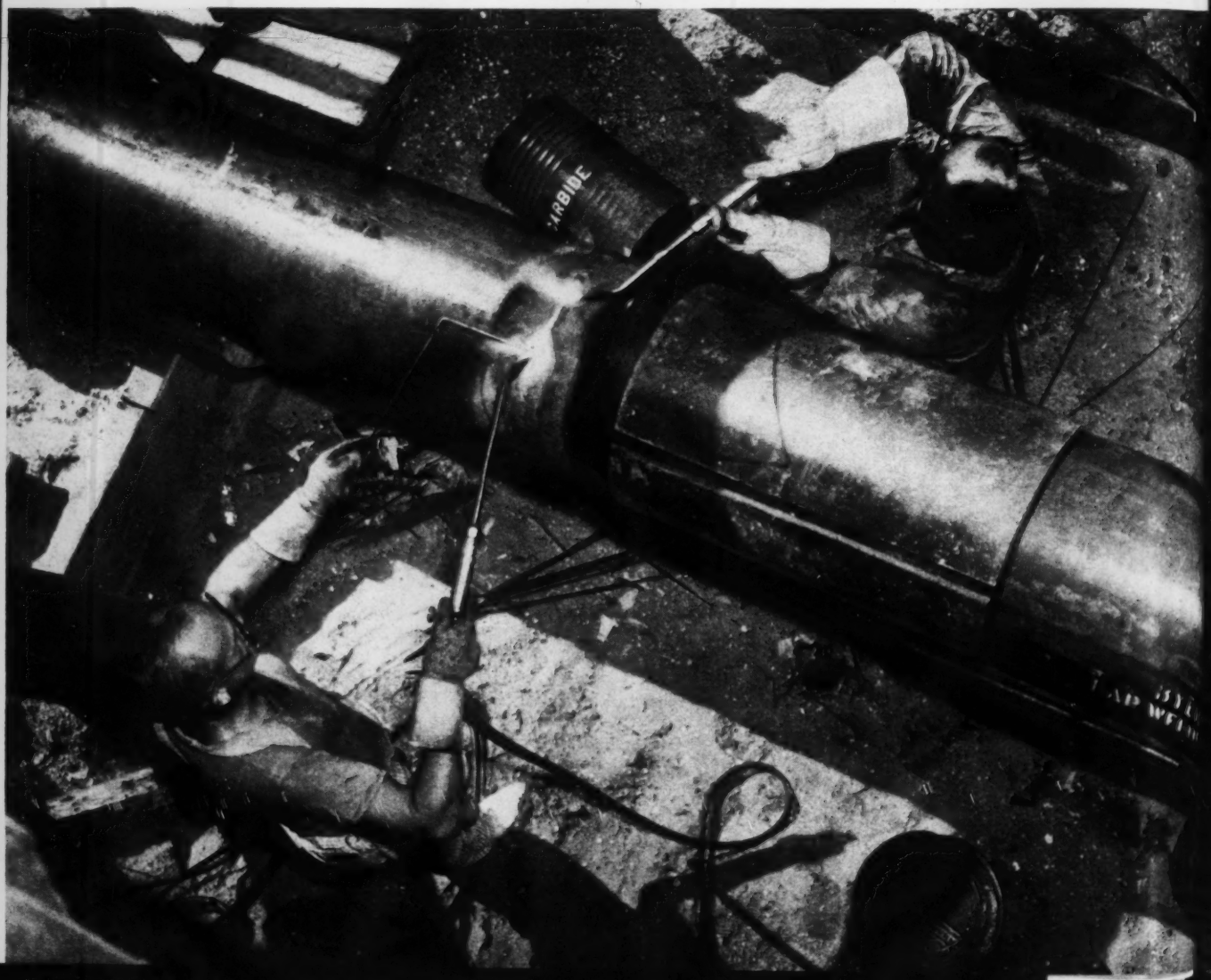
The design of Claude Birdsall, consulting engineer, called for the butt-welding of successive sections of 20½-ft. lengths of pipe, with joints reinforced by the attachment of welded sleeves. Like the pipe, the sleeves were formed from ½-in. thick wrought iron plates. Reason for using sleeve-reinforced joints is twofold: The sleeves provide rigidity to the long pipe line and they also furnish additional strength to the joints. Experience with outfalls of this type (more than a dozen wrought iron installations are on the New Jersey coast) indicates the probability of considerable motion imparted by changing tides and shifting sands. In this connection it should be noted that no bottom preparation such as trenching or pile support is provided.

As shown in the accompanying pictures, the pipe sections were joined and the sleeves attached at the water's edge. The outer end of the pipe, which was closed with a bolted cap to make the line watertight, was supported by two boats lashed together and kedged seaward with the aid of a donkey engine on the shore. A 6-in. pipe was placed within the outfall sewer by means of which water could be pumped into the larger pipe and thus control its buoyancy.

After the assembled pipeline had been pulled out to position, all the trapped air was removed by filling the larger pipe with water pumped through the inner pipe, thus permitting the pipeline to sink into position.

Removal of the cap and withdrawal of the inner pipe completed the installation.

A sleeve is slipped on the pipe before adjacent sections are butt welded together.

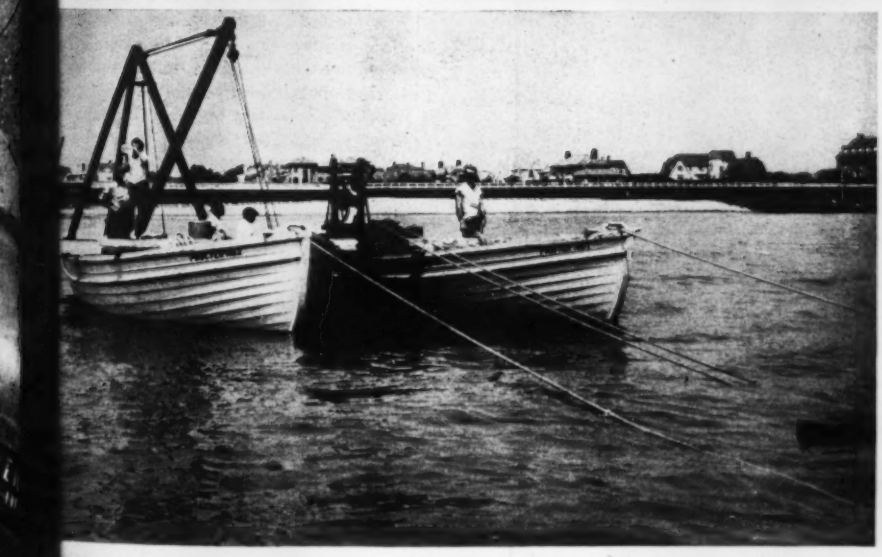


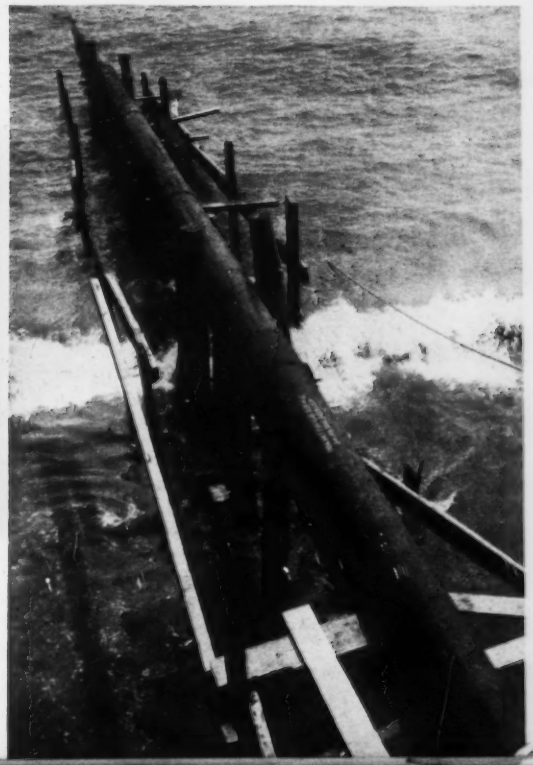
Split sleeve is centered over the joint, clamps are applied to pull the ends together, and then the sleeve is welded into place.

All photos by A. M. Byers Co.

Left: Here is the last section of the outfall line on its way to the sea. The smaller pipe is placed within the larger as a means of buoyancy control. When necessary, water is pumped to this smaller pipe to sink the sewer outfall below the surface.

Below: Completed outfall prior to the removal of the timber falsework, which was used to facilitate launching at the water's edge.





end of the pipe being pulled seaward by two boats lashed together with heavy rs. Anchors are dropped offshore and the boats as well as the pipe are pulled ith the aid of a donkey engine.

President's budget message outlines cut in non-defense public works

Army and navy construction totals $284,000,000, but declaration of war will place military expenditures on emergency basis, covered by a series of supplemental appropriation bills.

The President this week submitted to Congress a budget for the year beginning next July which cut expenditures for non-military public works about a third below this fiscal year—from about $740,000,000 in fiscal 1942 to about $512,000,000. In addition, the budget provides for some $284,000,000 for Army and Navy construction. These military figures, however, are entirely meaningless. They were prepared months ago and do not reflect current intentions. Military appropriations, actually, are no longer on a fiscal year basis. The money is provided through a constant series of supplemental appropriation bills.

Highways cut most

Biggest cut is in the highway appropriation, which was reduced to $88,500,000 from this year's $126,000,000. The 1943 figure consists of $60,000,000 for primary federal aid, $6,000,000 for aid to secondary roads, $22,000,000 for grade-crossing elimination, and $500,000 for public land roads.

The appropriation for public buildings is practically eliminated, this year's $34,720,000 being reduced to $2,500,000 to finish the general accounting office building in Washington. Doubtless, future supplemental appropriations will include money for further temporary office space in Washington.

The TVA's appropriation would be cut from $166,800,000 to $136,000,000. This will be used almost entirely for prosecution of power projects.

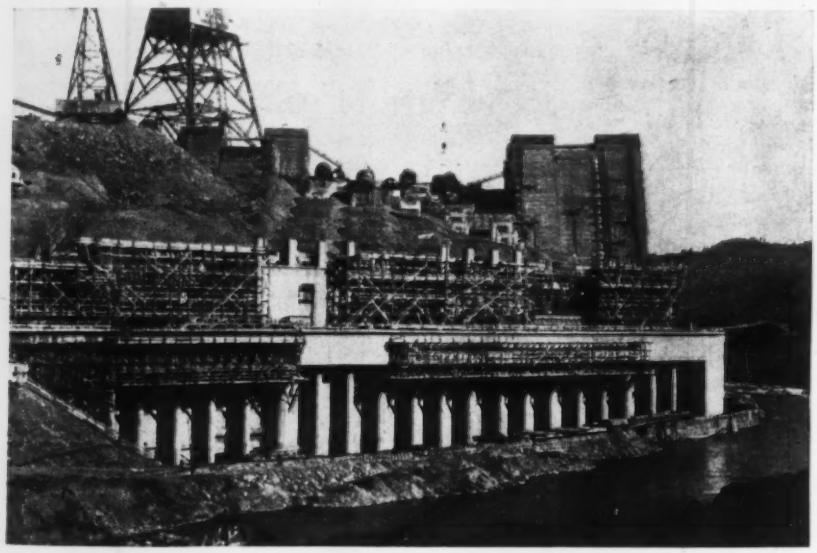
The Bonneville Power Administration will require only $22,750,000 for extension of its electric lines as compared with appropriations this year of $52,858,000. The Bureau of Reclamation takes only a slight cut—from $99,667,000 to $90,885,000. About half of this—$48,769,000—will be used for the Central Valley project, covering virtual completion of Shasta Dam, completion of Friant Dam, continuation of Keswick, start of the Antioch steam plant, and installation of four big generaors. For installation of generators at Grand Coulee Dam in Washington, $19,175,000 is requested.

River and harbor and flood-control expenditures stay at practically the same level, $148,746,925 in 1942 and $145,314,000 in 1943. General flood control gets $93,685,000 in this budget broken down as follows: Improvements, $89,322,200; examinations and surveys, $2,000,000; salaries, $313,020; maintenance of completed work, $749,780; stream gauging (U.S.G.S.), $275,000; precipitation stations (Weather Bureau), $300,000; soil erosion prevention (Agriculture), $500,000; Lugert-Altus project (Reclamation), $180,000.

The estimate for flood control on the Mississippi River and its tributaries is $30,000,000. For the current fiscal year a total of $22,000,000 was appropriated. Flood control work on the Sacramento River received $1,000,000, a decided increase over the 1942 appropriation, which was $98,325.

Continuation of the work on the power plant at Bonneville was allotted $4,166,000.

Under the general public works program there are scattering items such as Veterans Administration, $4,557,000; Bureau of Indian Affairs, $2,102,275; International Boundary Commission, United States and Mexico, $1,040,000. The National Park Service is scheduled for a large cut, from $9,346,000 to $609,600 for public works.



Work being rushed on Shasta Dam power facilities

With penstock sections ready to be embedded in the concrete of Shasta Dam, construction work is being rushed as rapidly as possible on the power production facilities. Installation of generating machinery has begun. Two 75,000 kw. generators have been completed by the manufacturers and are now stored at Boulder Dam; three more are on order. Fabrication of the steel penstock sections to be placed in position between the dam and powerhouse is well advanced, and preliminary surveys for a transmission line from Shasta to Antioch have been completed.

Contract for both the dam and powerhouse is held by Pacific Construction, Inc. Scheduled for completion about the middle of 1944.

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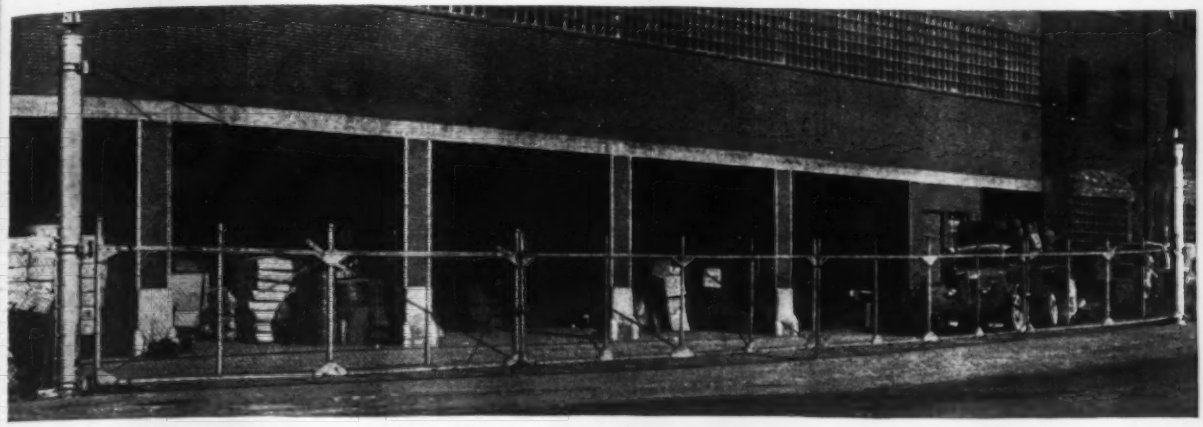
Lloyd T. McAfee, water and power engineer dies

Lloyd T. McAfee, manager and chief engineer of the Hetch Hetchy water supply, power and utilities engineering bureau, a department of San Francisco's Public Utility Commission, died in that city on January 1, after a short illness. He had been in the San Francisco Engineering department since 1909. He built the city's two principal tunnels (Stockton St. and Twin Peaks) and since 1918 had been connected with the Hetch Hetchy development, starting with construction of tunnels, dams and power development. In 1930 he became the city's first assistant city engineer with direct supervision over all Hetch Hetchy work. In 1932 duties with the Public Utility Commission were added and he became manager and chief engineer of the Hetch Hetchy water supply project. In 1938 he was appointed manager and chief engineer of the combined Hetch Hetchy water supply project and the power and utilities engineering bureau. During the building of the Golden Gate International Exposition, he had charge of construction on the permanent buildings on the island which were to become city property for airport uses after the exposition.



Four-fold swing gate at Corning Glass Works is 100 ft. wide

What is believed to be one of, if not the widest swing gate ever installed was recently put into service at the Corning Glass Works, Corning, N. Y. An unusual problem was presented for solution: Five large auto trailers had to be loaded simultaneously at a long shipping and receiving platform, and the building faced a busy street with a pronounced grade beginning near the gate center. Lengthy interruptions to traffic had to be avoided and a way had to be provided to raise the opening gate over the graded pavement.

As illustrated, the gate is a double 4-fold swing type, which measures 100 ft. from center to center of the 12 in. pipe supporting posts. These posts extend approximately 14 ft. 8 in. above grade line and are set in substantial footings. The two fence leaves adjacent to the posts are each 24 ft. long and the two center sections are each 26 ft. In other words, 50 ft. of gate is suspended on each post. The inner 26 ft. section is hinged from the end of the 24 ft. section.

A difficult design problem was involved, in that a way had to be found to prevent distortion in the 24 ft. leaf when the 26 ft. section was opened. Such distortion would cause the center section to drag on the ground preventing necessary ease of operation. This problem was overcome by developing a simple truss using a vertical drop bar into a ground shoe, and a removable back brace which became the diagonal tension member. When closed, the gate sections automatically lock these members into place so that tampering is prevented. The entire weight of the gate is suspended from the two 12-in. end posts.

Another difficulty to be overcome was that caused by ground conditions. The left-hand 50 ft. is level, but the ground rises rapidly from the center of the gate to the right-hand gate post. This necessitated grading the right hand 50 ft. so that when the inner section is opened, the latch end automatically rises 19½ in. in 180 deg. swing in order to clear the grade properly.

Gate frames are constructed of square tubing, with all joints are welded and reinforced by means of gusset plates, which also serve to carry the elaborate system of diagonal tension members required in an extended gate as large as this one.

The gate was designed and installed by the Anchor Post Fence Co., Baltimore, Md.

Construction record set for shell loading plant

Wolf Creek Ordnance Plant, $28,000,000 shell loading project at Milan, Tenn., was completed and delivered to the Army late last month by the contractors, Ferguson-Oman Co. Completion of the plant in little more than ten months sets a new record in shell loading plant construction during the current emergency, making possible the beginning of production operations at least two months earlier than had been scheduled in the original program.

There are more than 400 buildings on the 28,000-acre site among which are housing facilities for about 1,000 employees, 91 miles of permanent blacktop roads and 67 miles of standard gage railroad. The first unit was completed and turned over to the Army by the contractor on Aug. 10, and after three weeks of "practice loading," it began to turn out shells on Sept. 1. Since that date other production lines have been turned over to the government as they were completed.

Construction officials attribute the speed record to two main factors: A complete topographic survey of the entire tract of land was made in less than six weeks; on other jobs of comparable size, surveys have taken from four to six months, thus causing considerable delay in layout and construction. Another factor largely responsible for keeping the job ahead of schedule was that roads and railroads received preference at the start of the construction program to handle more than 15 million dollars worth of materials.

H. K. Ferguson and John Oman, Jr. of the joint contracting organization, in delivering the plant to Army officials stated. "We have received the fullest cooperation from the Army, from organized labor, from supply houses and from the thousands of men and women engaged in the work. All of them recognized the importance of speed, and with their help, we have been able to make good our promises."

The plant was designed by the H. K. Ferguson Co. of Cleveland, and construction was handled jointly by H. K. Ferguson Co and by the Oman Construction Co. of Nashville, Tenn. The plant is being operated by the Proctor & Gamble Defense Corporation.

Michigan starts 1942 with $6,000,000 road fund

The Michigan State Highway Department started its 1942 calendar year with a cash balance of $6,960,474.50. In offering tabulations showing financial operations for the calendar year just ended, State Highway Commissioner G. Donald Kennedy stated that this balance was an increase of $3,565,107 over the available funds that were on hand at the start of 1941.

As traffic volume soared to an all-time record, gas tax for the calendar year just ended totaled $35,410,890.24, an increase of $3,095,726 over 1940. Despite this increase, however, total receipts were but $843,904 over the previous year. This was due to a cut of $1,821,443 in regular federal-aid construction programs and a reduction of $253,799 in PWA construction.

Commissioner Kennedy states that the funds will permit continuation of normal highway functions in addition to the regular federal-aid program which will be limited to construction of highways certified as essential to national defense requirements.

More limitations for non-war construction

OPM believed studying plan to halt use of existing inventories on new civilian construction

Elimination of civilian auto manufacture after this month has stimulated speculation as to what similar moves might be taken in other industries. The construction industry has been on virtually a war footing since October, when SPAB served notice that it would grant priority ratings only on the most essential new civilian construction. The materials situation is now so tight that it is practically impossible to build without a rating.

Only major loophole left is the case of the man who has inventories of material on hand with which to initiate a new job. It is not unlikely that this last loophole will be closed by an order forbidding initiation of any new project, whether or not materials are on hand, without specific OPM approval. A similar step applying only to public utilities was taken some weeks ago (*ENR*, Dec. 18, 1941, p. 855).

No such order, as far as can be learned, has yet been drafted, but it is believed that the matter is under consideration. Such a move, obviously, would be intended to force any hoarded material into the market where it would be available for war construction.

It is not thought that there will be any change in the policy of giving priority help in the completion of projects which were underway Oct. 9.

Meanwhile, OPM has indicated that a supply of plumbing, heating, and electrical equipment will be kept moving through normal distributive channels.

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New Jersey retires 1956 highway bonds

New Jersey has retired $7,148,750 of callable highway extension bonds that were scheduled to mature in 1955 and 1956.

The January 1 payment included $5,000,000 principal and $106,250 interest on bonds issued in 1924 and payable in 1955 and $2,000,000 in principal and $42,500 interest on the final bonds maturing in 1956.

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Regional office of NRPB established in Porto Rico

The National Resources Planning Board has announced the establishment of a regional office at San Juan, Porto Rico, to serve primarily as a clearing house for plans and programs advanced for the development of that territory, in cooperation with Governor Rexford Guy Tugwell of Porto Rico and such agencies as he may designate. The new office will be organized under the supervision of F. P. Bartlett as manager, Donald F. Griffin as associate planning technician and Leslie W. Landrum as administrative assistant. Tracy Augur of the Tennessee Valley Authority, Elbert Peets of the U. S. Housing Authority, and Hale Walker of the Farm Security Administration are now in Porto Rico as consultants to the regional office to make an exploratory study of planning problems around San Juan and in other parts of the island.

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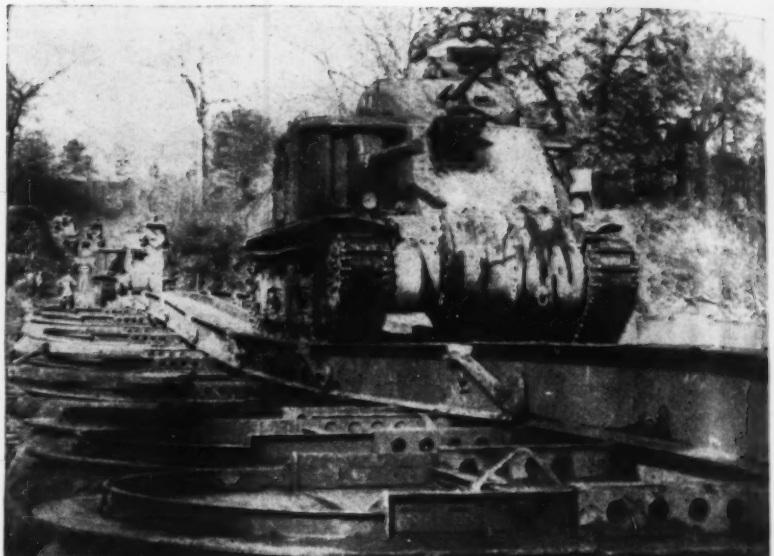
Baltimore adopts wartime street traffic program

To relieve traffic congestion caused by the influx of workers in defense industries in the Baltimore, Md. area, the city of Baltimore is enforcing a wartime traffic program. The city council has just approved a new traffic program which embodies 11 ordinances, chief of which sets an all-day parking ban in a large part of the downtown area. Other regulations make one-way streets of a number of the city's main thoroughfares, prohibit loading and unloading of merchandise on certain streets during certain hours, and forbid taxicabs to take on or discharge passengers except at the street curbs.



Associated Press photo

Army engineers test new type of pontoon bridge

Army engineers at Fort Benning, Ga., are making extensive tests of a new type of pontoon bridge, using interlocking steel section treadways floated on rubberized fabric pontoons. This type of bridge, it is claimed, can be put into service four times as fast as the old type pontoon with aluminum boats and timber decks. A 26-ton medium tank is shown crossing the bridge in maneuvers in which the new pontoon bridge was put to test.

More bidding activity for USHA projects

Greater bidding activity and a leveling off of prices has been noted in the United States Housing Authority's public housing program in the last two months, according to USHA Administrator Nathan Straus.

An analysis of the last eight slum-clearance projects started shows that the number of bidders per project averaged a fraction over nine, as compared with an average of about five before Nov. 1. On defense projects the average was slightly more than six per project. With the increased number of bidders came prices that were lower on the average than had been received for several months, indicating a tendency to level off from an upswing that began with the defense emergency.

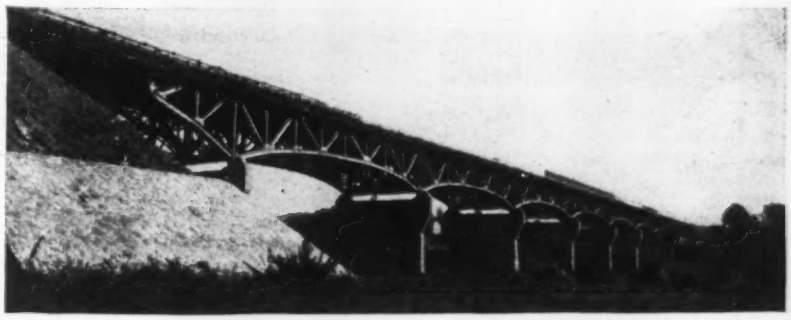
Increased bidding activity prevails throughout the country. Administrator Straus points out that a near record was set in Albany, Georgia, where recent proposals were received from 15 general contractors on two low-rent projects; eleven bids each were received on projects in Augusta, Georgia, and at Rockford, Ill.; ten and seventeen bids respectively were submitted for two projects in Los Angeles, Cal., nine at Lakeland, Fla., and seven for Daytona Beach, Fla., and five for a project in Chicago, Ill.

Virginia completes three bridges at Riverton

Between Front Royal and Riverton, Va., on the south fork of the Shenandoah River, the Virginia Department of Highways opened to traffic on Route 522 in November the bridge shown in the upper illustration. This bridge is 1,924 ft. 8 in. long, has a clear roadway of 40 ft. and provides two 4-ft. sidewalks. It is of deck construction and consists of eight truss spans 195 ft. 5 in. long, two cantilever spans 118 ft. 7½ in. long, and two beam spans, one at each end, 60 ft. long. The main truss spans are divided into three groups; the two center spans of each group are continuous with the cantilever arms nearest the middle of the bridge supporting suspended truss spans, and the two cantilever arms at the extreme ends of these groups supporting one end of the beam spans, which are of rolled sections and fixed at the ends resting on the piers. This latter arrangement proved economical and afforded ample clearance over the Norfolk & Western tracks on the Front Royal end (top photo).

The bridge shown in the center illustration was completed over the north fork of the Shenandoah River at the edge of Riverton, and is 1,090 ft. 3 in. long, with a clear roadway of 34 ft. plus two 4 ft. sidewalks. The bridge is of deck construction, and consists of seven 120 ft. 8 in. truss spans and one 90 ft. 9½ in. cantilever span, one 92 ft. 2 in. cantilever span and a 62 ft. 7½ in. beam span on the south end. The main truss spans were divided into two groups or two three-span continuous units with their cantilever ends near the middle of the bridge supporting a suspended span.

Crossing over Shenandoah's south fork (above) provides a clear 40-ft. roadway and two 4-ft. sidewalks. Wide roadway made use of three trusses for each span desirable. Truss depth chosen resulted in considerable economy in pier construction.



Bridge over north fork of Shenandoah River (above) makes available a 34-ft. wide roadway and two 4-ft. sidewalks.

Center span of Crooked Run bridge is cantilevered beyond the piers to support near ends of suspended outer spans by hinge joints. This allows for possible settlement of floating abutments, which were constructed on compacted fills with provision for future jacking if necessitated by fill settlement.

Crooked Run Bridge

Another bridge was erected at the north end of Riverton over a stream known as Crooked Run, lower illustration, which flows into the Shenandoah River a short distance below the junction of the two forks. This bridge is of deck type, plate-girder construction, 228 ft. 6 in. long, with a 34 ft. clear roadway and two 4-ft. sidewalks. There are three spans, the center span being 75 ft. long and the side spans 76 ft. 9 in. long. The center span is cantilevered beyond each pier to support the inner ends of the end spans. In all cases the end spans are hinged where they join the cantilevers to allow for any possible settlement of the floating type abutments, which were used on all three bridges.

On Oct. 4, 1940, a contract was awarded to the George F. Hazelwood Co., of Cumberland, Md., totaling $1,137,035.10. The contract included over 9,800 cu.yd. of concrete, 3,600 tons of structural steel, 700 tons of reinforcing steel, 330,000 cu.yd. of excavation and 16,000 tons of paving stone, etc. Actual work was started on Oct. 16, 1940 and on Nov. 17, 1941 the three bridges were opened to traffic.

Special provisions in the contract provided for restricted limits of variance in fineness modulus of fine aggregate, also for six kinds of experimental concrete involving the use of a small percentage of hydrated lime in designated sections of the structures. The rigid and constant control of aggregate grading, close moisture checks and testing of numerous cylinder and beam specimens, resulted in a remarkable uniform-strength concrete ranging close to 5,000 psi. in compression, as compared with the minimum requirement of 3,000 psi.

Heavy plywood used for forming was cut and built into sections at work shops and later lifted into place by cranes on the job, resulting in neatness of line and face of concrete.

No falsework bents were erected, while pre-designed steel bents were lifted into desired positions by overhead cranes.

Those in charge

The work on the three projects was carried out in accordance with specifications of the Virginia Department of Highways and under the supervision of C. S. Mullen, chief engineer, T. F. Loughborough, construction engineer, and H. E. Piercy in direct charge on all three bridges.

Holbrook named president professional engineers

The National Society of Professional Engineers, with headquarters in Washington, D. C., has announced the election of E. A. Holbrook, dean of the Schools of Engineering and Mines, University of Pittsburgh, as its president. Mr. Holbrook for the past three years has served as national director of the organization, and has represented the Pennsylvania State Society of Professional Engineers on the national body. He holds engineering degrees from the Massachusetts Institute of Technology and the University of Illinois, and was formerly assistant director of the U. S. Bureau of Mines. He is author of more than 100 published bulletins and articles on mining engineering and on engineering education.

Mr. Holbrook succeeds John W. Beretta, a civil engineer of San Antonio, Tex., who is at present a captain in the U. S. Army Air Corps and stationed at the Newfoundland Base Command.

Samuel I. Sacks, engineer and lawyer, of Philadelphia, Pa.; Alfred E. Roche, consulting engineer of Troy, N. Y.; William R. Wolfe, electrical engineer of Muskogee, Okla., and Joseph H. Morgan, civil and hydraulic engineer of Urbana, Ill., were named vice-presidents. Re-elected for the fifth time as national treasurer is Col. Walter L. Simpson, U. S. Army Engineers, retired, Washington, D. C.

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A.G.C. convention is shifted to Indianapolis

Because of war conditions on the West Coast, the annual convention of the Associated General Contractors of America, originally scheduled to be held in Seattle in February will take place in Indianapolis. The meeting will open Monday, Feb. 22 at the Claypool Hotel.

JOBS OF THE WEEK

PERSONNEL BUILDINGS, Bremerton, Wash.
Howard S. Wright & Co., Seattle, Wash., and L. H. Hoffman, Portland, Or., have been awarded a contract by Bureau of Yards & Docks, Navy Department, Washington, D. C., to construct nine frame 2 story, personnel buildings, at Puget Sound Navy Yard. Cost is estimated at $2,500,000.

TEMPORARY OFFICE BUILDING, Washington, D. C.
Charles H. Tompkins Co., Washington, D. C., has been awarded contract for erecting temporary federal office building A and B, by Public Buildings Administration, Washington, D. C. Estimated cost is $2,965,000.

FACTORY, Bloomfield, N. J.
George A. Fuller Co., New York, N. Y., has been awarded contract to erect a 1-story, 240x400 ft. brick, steel factory; and a 2-story office building by General Electric Co., Bloomfield, N. J. Estimated cost is $1,000,000.

FACTORY AND OFFICE, Cleveland, Ohio
Hunkin-Conkey Construction Co., of Cleveland, O., has been awarded contract for constructing factory and office building by General Electric Co., Schenectady, N. Y. Estimated cost is $1,000,000. Defense Plant Corp. will finance. Giffels & Vallet, Inc., Detroit, Mich., are engineers.

PLANT, Stamps, Ark.
Girdler Corp., Stamps, Ark., will construct a plant to extract hydrogen sulphide for commercial processing of chemicals and purified gas for McKamie Gas Cleaning Co. Estimated cost with equipment is $3,000,000.

PLANT, Washington Park, Ill.
Rust Engineering Corp., of Pittsburgh, Pa., will construct plant for producing steel castings and steel finished valves for U. S. Navy use, to include 3 steel-frame buildings of about 100,000 sq.ft. for Westcott Valve Co., East St. Louis, Ill. Estimated cost with equipment is $3,000,000.

TNT PLANT, Marshall, Tex.
Ford, Beacon & Davis, New York, N. Y., have been awarded contract for design and construction of a TNT manufacturing plant in Karaack-Caddo Lake area near here, for the War Department, Washington, D. C. Estimated cost is $23,000,000.

HOUSING, Cleveland, Ohio
Maurice L. Bein, Inc., Bridgeport, Conn., has been awarded contract for constructing 1,287 slum clearance housing units, by the Cleveland Metropolitan Housing Authority, at a cost of $4,943,000. Small, Smith & Reeb, Cleveland, are architects. Jones, Carey & Miller, Cleveland, are mechanical engineers.

PLANT, Waukegan, Ill.
Ray Borregard, of Waukegan, Ill., has been awarded a contract to construct steel plant additions by the American Steel & Wire Co., Chicago. Estimated cost is $10,000,000.

HOUSING, Los Angeles, Calif.
Harvey A. Nichols, Los Angeles, Calif., is lowest bidder for constructing 504 dwelling units, Maravilla Housing Project, at a cost of $1,739,000. Maravilla Associated Architects, Los Angeles, are architects.

BERLIN DAM, Ohio
E. J. Albrecht Co., Chicago, Ill., has been awarded a contract for constructing Berlin Dam in Mahoning River, Mahoning and Portage Counties, by U. S. Engineers, Pittsburgh, Pa. The contract price is $1,077,122.

HOUSING, Las Vegas, Nev.
McNeil Construction Co., of Las Vegas, Nev., has been awarded a contract for constructing one thousand demountable dwellings for employees by the Basic Magnesium Co., Las Vegas. Estimated cost is $1,500,000. Defense Plant Corp. will finance.

BRIDGE, Washington, D. C.
Diamond Construction Co., Washington, D. C., has been awarded contract for constructing Bridge 3, leading to the War Department building by Bureau of Public Roads, Washington, D. C. Contract price is $765,150.

POWER PLANT ADDITION, Washington, D. C.
Stone & Webster Engineering Co., of Boston, Mass., has been awarded a contract for constructing 7 story, steel and concrete electric power building at Washington, D. C. Estimated cost is $700,000.

STEEL PLANT, Coatsville, Pa.
By Products Steel Co., c/o Lukens Steel Co., Coatesville, Pa., has awarded contract for a plant addition to Turner Construction Co., Philadelphia, Pa., at an estimated cost of $700,000.

NOTE—Additional bidding and contact news on over 800 projects large and small appear in the Construction News sections beginning on page 18.

Wisconsin contractors collecting scrap steel

Taking the lead in the nation, members of the Wisconsin Road Builders Association have started a campaign to collect scrap steel as one phase of their effort to cooperate to the fullest possible extent with the defense program. E. E. Hoebel, executive secretary, Wisconsin Road Builders Association, has advised OPM that "After a careful survey of the highway industry in Wisconsin, the road builders association is positive that a great many carloads of steel scrap can be assembled by us for shipment to mills. Our fullest cooperation in the defense program is offered. All collecting will be done gratis by Wisconsin highway contractors."

This offer of cooperation and tender of service is the first of its kind to be received by the OPM, according to Mr. Borinstein, consultant, Iron and Steel Branch, OPM. "Progress of the campaign will be watched and steps will be taken by OPM to obtain similar cooperation from other states." OPM has made an appeal to states, counties and cities to dismantle abandoned bridges, viaducts, water towers and other structures from which scrap steel might be made available, and to have collected all scrap in all of their institutions and departments.

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ACL names Willoughby chief consulting engineer

The Atlantic Coast Line Railroad announces the appointment of J. E. Willoughby, former chief engineer, to the post of consulting engineer. Mr. Willoughby became chief engineer in 1915, having served the road as assistant engineer from 1913. Before joining the ACL he was connected with the Louisville and Nashville Railroad as engineer of construction. His headquarters will be changed from Wilmington, N. C. to Blount Springs, Ala.

R. W. Marye, assistant chief engineer, succeeds Mr. Willoughby as chief engineer with headquarters in Wilmington. Prior to becoming assistant chief engineer of the road, Mr. Marye served as principal assistant engineer, having joined the engineering staff in 1912.

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Reservoir clearing starts above Kentucky Dam

Work of clearing several thousand acres of land in the Tennessee Valley for the Kentucky Dam Reservoir will be started the middle of this month.

Sam E. Vessar, engineer of the Railroads and Highways Division of TVA has set up an organization and field crew of engineers for relocating all roads that will be flooded. It is estimated that more than $10,000,000 will be spent in relocating highways, railroads and the N. C. & St. L. Railroad bridge over the Tennessee River at Trotter's Landing. The work is expected to take about three years.

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Navy construction award won by South Boston Yard

A blue and white pennant, the U. S. Navy's highest award for outstanding performance in public works construction, has been won by the South Boston Yard, an annex of the Boston Navy Yard. The Bureau of Yards and Docks made the award after completion of a competition involving all of the 33 Navy Yard stations, both in and out of the United States.

When the public works crew began construction last Mar. on a $30,000,000 expansion program for the 100-acre South Boston Yard, only the Commonwealth Drydock and the marines barracks were in the area. In the intervening nine months, a total of 19 buildings and miles of paved roads have been completed. The yard is now equipped with shops and structural facilities, steam and power plants, barracks for 1,000 men of the receiving station, mess facilities, police and security building, garage and locomotive repair shop, a dispensary and a general clinic.

The award was made by Captain R. C. Grady, U. S. N., Captain of the Boston Navy Yard, representing Rear Admiral William T. Tarrant. Commander H. E. Wilson, public works officer of the first naval district, accepted the award on behalf of the construction force.

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Water shortage averted at Hudson, N. Y.

Discovery of a broken water main discharging almost a half million gallons daily into a nearby sewer has solved in part the mystery of a serious water shortage in Hudson, N. Y. during the last few weeks. J. McClure Wardle, waterworks superintendent, working with The Pitometer Co. of New York City, found that water from the broken main had carried away tons of earth underneath part of state highway Route 9. Traffic was passing over concrete pavement beneath which there was a hole some 10 ft. in diameter and about 10 ft. deep.

News-Record editors assume new duties

James I. Ballard

Edward J. Cleary

On January 1, James I. Ballard, managing editor of *Engineering News Record*, took up new duties as assistant to the publisher of *Engineering News-Record* and *Construction Methods*, and the managing editorship was assumed by Edward J. Cleary, associate editor. Jim Ballard joined the editorial staff in 1929, serving until 1935, when he resigned to become editor of *Western Construction News* in San Francisco. A year ago he returned to *Engineering News-Record* as managing editor. Ballard is an engineering graduate of North Dakota State College and also attended the University of California for post-graduate studies.

Ed Cleary has been *News-Record's* municipal, sanitary and water supply specialist since he joined its editorial staff in 1935. He holds B.S., M.S. and C.E. degrees from Rutgers University, and prior to taking up editorial work had several years experience in heavy construction, sanitary research and municipal engineering. He is a special lecturer on public works at New York University.

MEN AND JOBS

E. Shaw Cole, formerly field engineer with The Pitometer Co., Inc., engineers, has been promoted to the position of chief engineer. Mr. Cole graduated from the Thayer School of Civil Engineering, Dartmouth College, in 1931 and obtained a master's degree in sanitary engineering from New York University in 1939. He was associated with Newsom and Aldrich, consulting engineers for about a year following his graduation. **E. K. Wilson,** who for many years held the position of chief engineer of The Pitometer Co., will act as consulting engineer for the firm and will retain his position as treasurer.

R. C. Buck, architect and engineer, of Superior, Wis., has been named to the newly created city planning commission of that municipality, by the city manager.

H. W. Bogie, Montana engineer, has been named district manager for the defense contracts division of OPM at Helena. He will handle bids on defense materials and relations with primary and subcontractors.

Fred Quinnell, city engineer and commissioner of public works at Roundup, Mont., for the past 20 years, has been named acting city manager of Bozeman in the absence of **Maj. M. E. Henderson,** former city manager.

Alf O. Skaret, Fargo, N. D., structural engineer, has left for the Canal Zone, where he will be engaged on canal construction work.

William Hamilton, Denver engineer, has returned to employment with the Bureau of Reclamation at the Denver offices after having been affiliated with the Federal Power Commission in the capacity of engineer.

Joe Banner, former engineer with PWA in Wyoming, has accepted a position with the Tipton Engineering Co. of Denver. His new connection will be in the capacity of engineer on the construction of the U. S. Army Engineer's ordnance plant, that is being built at Salt Lake City. The Tipton Co. is engineering consultant on the project.

King Burkhardt, Denver structural engineer, has accepted a position in the engineering department of the Stearns-Rogers Mfg. Co. of Denver. He was former structural engineer during the construction of the Denver ordnance plant and prior to that was in the bridge designing department of the Colorado state highway department for nine years.

Ben Powell, for many years construction engineer for the U. S. Forest Service from the Denver regional office is now affiliated with the Bureau of Reclamation at their Denver offices in the capacity of engineer.

Charles H. Snyder, for many years city engineer of Oswego, N. Y., has been reappointed to that position by incoming Mayor Joseph Scanlon.

Stephen Wildeman, formerly principal engineering draftsman with the QMC construction of the Kankakee Ordnance Works at Joliet, Ill., has been transferred and promoted to chief engineering draftsman with the Ordnance Department in the operation and maintenance of this munitions plant. Mr. Wildeman has served the War Department in various capacities for six years at Rock Island, Peoria, and Rantoul, Ill.

William E. Hamilton, manager of the construction department of Sanderson & Porter, engineers and constructors, New York, became a partner in the firm on Jan. 1. Mr. Hamilton has been with Sanderson & Porter almost continuously since 1914 on construction of hydro and steam power stations. He became manager of the construction department in 1923. **Henry W. Butler,** engineer in charge of mechanical design and equipment, also was admitted to partnership in the firm on Jan. 1.

Frank H. Shaw has recently completed supervising the construction of the airplane plant of North American Aviation at Dallas for Defense Plant Corp. and has been placed in charge of defense plants in Utah. His headquarters at present are in the Field Building, Chicago.

Baxter F. Wade, sanitary engineer with the city health department at Greensboro, N. C., resigned Dec. 31 to become superintendent of the water and sewer system at Jackson, Miss. His successor at Greensboro has not been named.

Vernon Miller of Indianola, Iowa, has been appointed county engineer of Humboldt County, Iowa, replacing **Kenneth J. Smith,** who resigned Jan. 1.

T. T. Betts, of Fayetteville, N. C., district engineer for the North Carolina State Highway and Public Works Commission, has just been appointed director of public works and utilities service of the Cumberland County Civilian Defense Council. **I. O. Abbitt** has been named director of the utilities division of the Roxboro, N. C., Civilian Defense Council.

Thomas R. Glenn, Jr., junior design engineer, and **Howard Hagood, Jr.,** chemist at the filtration plant, city water department, Austin, Tex., have resigned to join the Navy's V-7 training class and reported at Annapolis Jan. 7 for a four-month training course.

Harold C. Bates, acting county engineer of Lanark County, Ont., Canada, stationed at Perth, has been appointed county engineer of Perth County, with headquarters at Stratford, Ont. He succeeds **John M. Empey,** recently retired. Mr. Bates is a native of Toronto and a graduate of Queen's University, Kingston.

Maj. Gerald F. Botsford, formerly executive officer of the Seneca Ordnance Depot, Kendaia, N. Y., has been appointed area engineer in charge of construction. He succeeds **Col. Paul B. Parker,** who has been transferred to Buffalo.

W. G. Bester, Osceola, Iowa, has been appointed county engineer for Union County with headquarters at Creston, the county seat. For the past two years he has been county engineer for Clarke County and before that for six years was with the Iowa State Highway Department.

Wilson D. Lorenzen, assistant to the county engineer at Albia, Iowa, has been appointed a senior engineering aid to the topographical division of the United State Geological Survey.

A. J. Koenig has been appointed city manager of Jackson, Mich., effective Jan. 1. He succeeds **C. P. Ismon,** resigned. Mr. Koenig, a native of Saginaw, Mich., has served as assistant city manager at Pontiac, Mich., and as city manager at Fort Atkinson, Wis., and at Wilmette, Ill.

W. F. Hutson, resident engineer for the Texas highway department, stationed at Llano, Tex., for the past few years, has been transferred to Corpus Christi, along with his entire staff, for immediate work on defense highways. Mr. Hutson and his staff, **Ervin Nixon,** office assistant and **Noble E. Latson** and **Carlos McKinney,** field engineers, reported at Corpus Christi Jan. 1.

Harvey Hegge, inspector and laboratory assistant with the Iowa highway commission for ten years, has resigned to accept a position with the Lock-Joint Pipe Co. **John Fassbinder,** who has been with the highway commission for eleven years as inspector and instrumentman on construction, has entered business at Charles City, Iowa. **Don P. Jackson,** another commission instrumentman for twelve years, has also resigned.

BRIEF NEWS

IN ORDER to make the resources of the WPA available for the Army and Navy departments for the duration of the war, Pennsylvania officials of WPA are preparing for the deferrment of all projects not essential to the armed forces, it has been announced at WPA headquarters in Harrisburg, Pa. At the present time 68,661 persons are employed on the Pennsylvania rolls, and of these approximately 3,500 are employed on projects certified as being necessary to the national defense effort.

SVERDRUP AND PARCEL, consulting engineers of St. Louis, Mo., are making preliminary surveys for the proposed free bridge to be erected across the Mississippi River at Sioux City, Iowa. Estimated cost of the proposed structure is $1,000,000.

THE LAKE BEING FORMED by Friant Dam, the 320-ft. concrete structure on the San Joaquin River, now nearing completion as one of the two important storage dams on the great Central Valley project being built by U. S. Bureau of Reclamation, has been officially named Millerton Lake. This name was selected due to the fact that the township of Millerton, the first county seat of Fresno County, and Fort Miller, the first U. S. military post established for the protection of early settlers from Indian depredations, will be entirely submerged by the water which now is being impounded behind Friant Dam.

GREAT BRITAIN'S urgent demands for manpower have led to a new control scheme to reduce the amount of public building. The scheme, which comes into force on Jan. 1, 1942, will not only release men for war jobs, but also divert materials to more urgent needs. At present, local, highway and public utility authorities must obtain authorization from the government before embarking on any operation costing over $400. This regulation continues, and the new order to be put into effect next year will also apply to everyone from farmers to factory owners. Hitherto, individuals and private concerns could apply for licenses from the Ministry of Works for construction or alterations costing over $400. In 70 percent of the cases licenses were granted. Not only will the new control reduce this percentage heavily, but will also cover repairs, including repairs of war damage, maintenance, decoration, demolition and air raid precaution. Where such essential works cost over $400 during the year, the Ministry will grant an annual license in advance so that requirements can be met as they arise.

Acme Photo

Landslide on Sunset Highway halts traffic

A 200-ft. gap was left in the four-lane Sunset Highway, 11 miles east of Seattle, Wash., the middle of last month as a result of a combined washout and landslide caused by heavy rains. Sunset Highway is the principal route between Seattle and Spokane.

U. S. Engineers increase working hours

Orders extending the working hours of approximately 300 employees in the U. S. District Engineers Office of the U. S. Engineers at Louisville, Ky. from 39 to 45½ hours per week have been received by Col. Henry Hutchings, Jr., in charge of the Louisville office. The orders were issued by Col. C. L. Hall of the Ohio River Division at Cincinnati. The increased hours are necessary to expedite construction of vital defense projects.

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Harding nominated as public works commissioner

James C. Harding, consulting engineer of New York City has been nominated to the post of commissioner of public works of Westchester County, N. Y. The $12,000-a-year position was formerly held by Charles H. Sells, of Pleasantville, N. Y., who recently resigned to accept a contract as chief engineer for a $200,000,000 American-British defense project in the Middle East.

After early engineering experience with the firm of Fuller & McClintock, New York City consulting engineers, from 1918 to 1927, he began private practice as a consulting engineer with offices in both New York City and Mount Kisco.

Mr. Harding has been acting as consulting engineer for a number of municipalities in New York, Connecticut, New Jersey and Pennsylvania. He is co-chairman of the National Committee on Wells and Pumps of the American Water Works Association.

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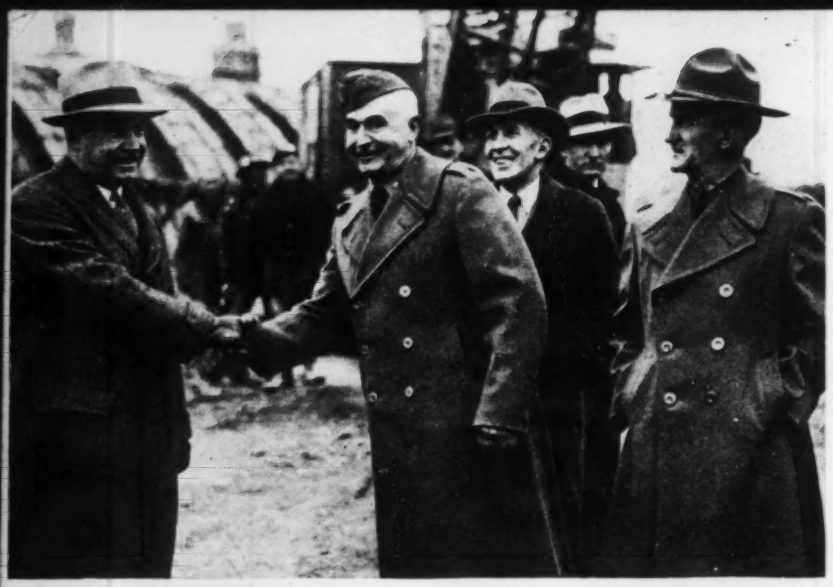
Oversized route signs at strategic highway points

The Pennsylvania Department of Highways has begun installation of oversized route markers at strategic points in the system. These signs are one and one-half times larger than the standard signs and reflectors are incorporated in the design.

The larger signs are being erected at the junction of two important routes and where there is a right angle turn on an important traffic artery in a congested area.

MEN AT WORK



FRANK JORDAN (left above), vice president of Poirier & McLane Corp. of New York City, receives congratulations for his firm from MAJ. KARL R. RODGERS of the constructing quartermaster's staff at Seneca Ordnance Depot on having completed 500 igloos in record time. Others shown are, left to right: RALPH BURKHALTER, project manager for Poirier & McLane, and MAJ. CHARLES H. TERRY, engineer officer. During a single week 78 igloos were constructed and the 500 were concreted during the period from Aug. 21 to Nov. 13, said to be the best record ever made on igloo construction.

Over anxious to show a truck as a background and that the two men above were actually at work, the editor nearly left out the one at the left. He is WALTER STEINBRUCH, general construction superintendent for the Austin Co. on a new manufacturing building at Schenectady, N. Y. for General Electric. He is talking with W. H. HEATH, engineer in charge for G.E.

On the $7,000,000 Valdosta, Ga., twin-engine bomber plant G. M. C. LUCAS at extreme left was engineer in charge of all field and inspection work, having a staff of 60 inspectors. ARNOLD MACSPADDEN at his left was engineer and officer in charge of office and contract work for the U. S. Army.

As chief engineer of the Syracuse, N. Y. Grade Crossing Commission NELSON F. PITTS (lower right), also city engineer of Syracuse, has supervised the $6,500,000 project that made possible elimination of 24 grade crossings on the Lackawanna R.R. within the city of Syracuse. The job was completed late in November after 15 months of work.

ALBERT KAHN (left), head of Albert Kahn Associated Architects and Engineers, Inc., is no exception to the hard work rule that prevails throughout his organization as a result of the national defense building program. He is shown busy in his private drafting room in Detroit.

Those in charge of construction and those who will operate the Army's $7,900,000 Voorheesville, N. Y., regulating station (depot) are shown at the right. They are, left to right: LIEUT. J. F. SALLY, executive officer on the project; COL. M. A. MCFADDEN, zone constructing quartermaster, Second Zone; LT. COL. L. B. DOUGLAS, commanding officer, Voorheesville; CAPT. A. E. PERKINS, project constructing quartermaster; and LT. COL. J. D. CHAMBLISS, department quartermaster and supply officer, Voorheesville.

At a recent meeting of the Illinois Road Builders Association in Chicago the group below played an important part. They are, left to right: HERBERT A. ANDERSON, of Oak Park, past president of the association; OTTO A. MILBURN, of Rockford, present president; GOV. DWIGHT H. GREEN of Illinois; and TAYLOR G. SOPER, of Chicago, executive secretary.

With sleeves rolled up CARL C. AHLES (below), principal highway engineer of location and design for the New York State Department of Public Works, was preparing road jobs for contract when the editor made his call.

Shasta Dam is now in the stage where 15-ft. penstock pipe is much in evidence. Daily routine includes the large-scale welding operations in the shop and on the dam, making X-rays and hydraulic pressure tests of welds, moving heavy pipe sections by cableway and the many niceties of adjusting the large pipe exactly in its final position. The two men most closely concerned in this for the U. S. Bureau of Reclamation are GRANT BLOODGOOD (left below), field engineer, and G. L. YETTER, welding engineer. Both are old-timers with the Bureau with long experience in this type of work.

H. C. LIVINGSTON (below) was recently promoted from chief engineer to general superintendent in charge of all construction for the Union Pacific Coal Co., Rock Springs, Wyo. Mr. Livingston has been with the firm since 1927 and chief engineer since August, 1940.

OBITUARY

A. A. HAWKINSON, a consulting engineer at Detroit Lakes, Minn., died recently. At the time of his death he was serving as city engineer.

JOHN W. KIDD, 60, dean of the school of engineering at the Texas College of Mining, El Paso, Tex., died Dec. 29. Mr. Kidd had been a member of the faculty since 1914.

WILLIAM M. JOHNSTONE, assistant commissioner of works for the city of Ottawa, Ont., died in Ottawa on Dec. 22. Mr. Johnstone graduated from Queens University, Kingston, in 1913, and worked as resident engineer on storm sewer construction in Toronto, at Coppercliff, and at Hamilton, Ont., before entering the service of the city of Ottawa.

LIEUT. COL. LLOYD COLLIS, civil engineer, expert in city planning and construction chief of the Quartermaster Corps for the Eastern District of the United States during World War I, died Jan. 2 in New York at the age of 71. Colonel Collis was educated at Columbia University, having received his civil engineer degree in 1892. He began his engineering activities as a member of the staff of the maintenance of way department of the Pennsylvania Railroad in Jersey City, N. J. He formed his own engineering company in 1903, and, among other major projects, completed the Sanderson Ave. bridge at Scranton, Pa., then the longest single-span concrete arch in the country. He also constructed a water supply system for the Military Academy at West Point.

GUSTAV DANIEL WETTERSTRAND, 50, resident engineer for the Canadian National Railways at Prince Rupert Drydock, died recently at Vancouver, B. C. Before going to Canada, Mr. Wetterstrand had extensive engineering experience in Sweden. He was a lieutenant in the Swedish army, and had worked on defense fortifications on the Swedish-Finnish border.

DANIEL BAXTER CRAIG, well known construction engineer of the Power Corp. of Canada, died Dec. 27 at Montreal.

DEAN E. FAUBERS, 46, civil engineer, died Dec. 28 at West Lafayette, Ind. Mr. Faubers constructed many roads and streets in the Lafayette area and built the Oakdale Dam near Monticello, Ind. He was a civil engineering graduate of Purdue University in the class of 1921.

CLEMENS BLANK, 66, superintendent of construction and maintenance for the Indianapolis Water Co., died Dec. 27 at Indianapolis. He had been associated with the water department since 1912.

LOUIS A. ADAMSON, 26, Twin Falls, Idaho, architect who was employed by the Morrison-Knudsen Construction Co. on defense projects at Wake Island, was killed during the Japanese invasion.

ROSS ESHELMAN, 63, well known building contractor of Anderson, Ind., died recently in that city.

EARL MINGS, building construction engineer, died Dec. 27 at Indianapolis, Ind. Mr. Mings served as Shelby county surveyor and highway supervisor from 1933 to 1936.

THEODORE ORMANEC, 24, member of the Belmont County, Ohio engineering staff, died at Kirkersville, Ohio, Dec. 13, from injuries suffered in an automobile accident.

JOHN K. JOICE, 72, retired former Chicago contractor, who handled many public works projects, died Dec. 16 in Mexico City, Mexico.

CARL SAINT CLAIR MCKINLEY, 66, well known civil engineer, died Dec. 21 at Dallas, Tex.

R. CLINTON FULLER, 86, president of the Fuller Building Co., Providence, R. I., died Dec. 15 at Providence.

GEORGE EDEL, president of George Edel, Inc., builders, at Philadelphia, Pa., died Dec. 19 at the age of 65. Mr. Edel had been a prominent Philadelphia builder for 40 years.

LEON F. MACKAY, 48, civil engineer in the copyright office, Department of Secretary of State, at Ottawa, Ont., died Dec. 24 at Ottawa.

CONTRACTS AND CAPITAL

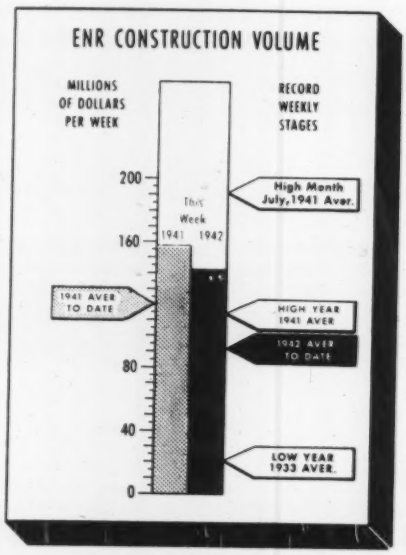
ENGINEERING CONSTRUCTION awards for the week total $141,152,000, a decline of 10½ percent from the volume for the corresponding week last year. Private awards decrease 63 percent from the 1941 week, and are responsible for the lower volume, as public construction is up 4 percent over a year ago. State and municipal construction is 45 percent lower, but federal work is 24 percent higher than in the 1941 week.

Construction volume for the first two weeks of 1942 totals $196,184,000, a decrease of 18 percent from the corresponding period last year. Private awards are 75 percent lower than in the 1941 two-week period, but public construction gains 3 percent as a result of the 21 percent increase in federal work.

In the classified construction groups, gains over last week are in waterworks, bridges, industrial, commercial and public buildings, and earthwork and drainage. Increases over the 1941 week are in waterworks, earthwork and drainage, and unclassified construction.

New capital for construction purposes for the week totals $451,169,000. This compares with $13,232,000 for the corresponding week last year. The current week's financing is made up of $1,169,000 in state and municipal bond sales, and $450,000,000 in federal appropriations from the National Defense Emergency Act of 1942.

New capital for the opening two weeks of 1942 totals $467,687,000, compared with $33,230,000 for the period a year ago.



CONTRACTS

(Thousands of dollars)

	Week Ending Jan. 9 1941	Jan. 1 1942	Jan. 8 1942
Federal	$88,285	$34,136	$109,167
State & Municipal	35,354	17,509	19,317
Total public	$123,639	$51,645	$128,484
Total private	34,184	3,387	12,728
TOTALS	$157,823	$55,032	$141,152
Cumulative 1942	(2 weeks)		$196,184
1941	(2 weeks)		$240,367

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	1941 2 weeks	Cumulative 1942 2 weeks
NON-FEDERAL	$33,230	$17,687
Corp. Securities	4,618	.....
State & Mun.	14,949	7,687
U.S.H.A. loans	12,043	.....
R.F.C. loans	1,620	10,000
FEDERAL	.....	$450,000
TOTAL CAPITAL	$33,230	$467,687

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Jan. '42	267.63	128.65
Building Cost	Jan. '42	217.12	117.37
Volume	Dec. '41	217	95

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

SEWAGE TREATMENT PLANT
BROOKLYN, N. Y.

OWNER: City of New York, N. Y., Dept. of Public Works.

PROJECT: Structures and equipment (Contract 4) and piping (Contract 5) in connection with the 26th Ward Sewage Treatment Works, on Miller and Schenck Avenues, and the Belt Parkway, Brooklyn, N. Y. Involves construction of primary sludge gallery entrance building; air meter building; return sludge meter building; digested sludge pumping station; primary sludge gallery; preliminary settling tanks; aeration tanks; return sludge gallery; final settling tanks; sludge thickening tanks; sludge digestion tanks, including piping gallery and valve chambers; entrance tunnel to digested sludge pumping station; and appurtenances to above work; piping; mechanical equipment; backfill around tank structures; electric conduit system; and miscellaneous work.

CONDITIONS: Contractor to furnish all materials and complete work in 550 calendar days. Rail, highway and water transportation facilities available. Wage rates are: skilled labor, $1.10 to $2.25 per hr.; semi-skilled, $1.00 to $1.62½; and common, 87½¢.

BIDS: Three bids were received November 7, 1941 on Contract 4, ranging from $1,680,849 to $1,808,137. Four bids were received on the same date for Contract 5, ranging from $414,988 to $447,200. The low bidder on Contract 4, E. W. Foley, Inc., was the third low on Contract 5, but he stipulated that he would make a deduction of $46,000 if both contracts were awarded to him. This was lower than the amount considering each contract separately, and Foley was awarded both contracts about the 10th of December, $2,065,472.

Contract 4 and 5 combined

LIST OF BIDDERS:

1. E. W. Foley, Inc., Brooklyn, N. Y. (contract) — $2,065,472
2. Charles F. Vachris, Inc., Brooklyn, N. Y. — 2,106,607

Contract 4

1. E. W. Foley, Inc., Brooklyn, N. Y. (contract) — $1,680,849
2. Charles S. Vachris, Inc., Brooklyn, N. Y. — 1,704,470
3. P. Tomasetti Contracting Co., Brooklyn, N. Y. — 1,808,137

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Soil bearing tests	7 ea.	$250.00	$500.00	$300.00
2. Earth excav. above elev. 0.0	21,000 c. y.	2.30	3.00	1.00
3. Earth excav. below elev. 0.0	44,000 c. y.	2.30	3.00	2.75
4. Earth excav. in trench	500 c. y.	3.50	3.00	3.00
5. Timber sheeting left in place (not over $30.00 per M. b.m.)	30 M.B.M.	30.00	30.00	30.00
6. Wood piles	6,800 l. f.	.85	.75	1.00
7. Portland cement	43,000 bbl.	2.25	1.95	2.10
8. Natural cement	7,000 bbl.	2.50	2.60	2.75
9. Concrete	33,000 c. y.	15.00	13.00	16.00
10. Precast conc. slabs	7,600 s. f.	.30	.10	.50
11. Sheet filler exp. joints	18,000 s. f.	.20	.25	.25
12. Sheet filler and rubber comp. exp. joints	700 s. f.	.65	.65	.75
13. Copper water stops	48,000 lb.	.35	.35	.50
14. Rubbed finish	137,000 s. f.	.07	.12	.10
15. Cement floor finish	32,400 s. f.	.14	.18	.10
16. Conc. floor hardening treat	30,700 s. f.	.04	.02	.02
17. Steel reinf	5,000,000 lb.	.065	.055	.065
18. Struct. steel	158,000 lb.	.07	.11	.10
19. Misc. wrought metals—steel, plain	125,000 lb.	.16	.15	.20
20. Misc. wrought metals—steel, galv.	20,000 lb.	.21	.30	.25
21. Misc. wrought metals—bronze	16,000 lb.	.75	.15	.70
22. Misc. iron castings	10,000 lb.	.08	.08	.10
23. Steel floor grating—1 in	1,850 s. f.	1.25	1.35	1.60
24. Steel floor grating—1¼ in	160 s. f.	1.50	1.59	1.80
25. Steel floor grating—1½ in	2,200 s. f.	1.67	1.80	2.00
26. Threaded pipe railing (single)	3,300 l. f.	1.35	1.50	1.75
27. Threaded pipe railing (double)	6,000 l. f.	1.90	2.00	2.50
28. Stop planks and baffles	L. S.	3,100.00	7,500.00	6,000.00
29. Sludge thickener mechanisms	L. S.	11,600.00	12,200.00	15,000.00
30. Sludge collector mechanisms	L. S.	145,060.00	137,000.00	150,000.00
31. Dry chemical feed machine	L. S.	1,415.00	1,700.00	1,500.00
32. Pumping units	L. S.	$2,000.00	$6,000.00	100,000.00
33. Sludge digestion tank covers	L. S.	105,050.00	120,000.00	120,000.00
34. Sluice gates	L. S.	45,000.00	55,000.00	50,000.00
35. Hoisting equip	L. S.	3,000.00	4,000.00	3,500.00
36. Indicating and measuring devices	L. S.	3,600.00	4,200.00	3,500.00
37. Slide gates	L. S.	5,500.00	4,000.00	6,000.00
38. Elec. conduits—steel	43,000 lb.	38	45	40
39. Elec. conduits—copper silicon alloy	1,800 lb.	1.20	1.00	1.20
40. Elec. conduits exp. joints	1,250 lb.	2.00	2.25	2.50
41. Elec. conduits—conn. at motors	L. S.	800.00	800.00	1,000.00
42. Misc. work	L. S.	4,039.00	14,000.00	7,500.00
43. Primary sludge gallery entrance bldg	L. S.	6,850.00	14,000.00	7,500.00
44. Air meter bldg	L. S.	6,550.00	14,000.00	7,500.00
45. Return sludge meter bldg	L. S.	24,050.00	49,000.00	30,000.00
46. Digester sludge pump station	L. S.	9,650.00	13,950.00	15,000.00
47. Misc. arch. work	L. S.	7,800.00	9,000.00	9,000.00

Contract 5

LIST OF BIDDERS:

1. Harry Starkman & Bros., New York, N. Y. — $414,988
2. H. Sand & Co., Inc., New York, N. Y. — 416,650
3. E. W. Foley, Inc., Brooklyn, N. Y. (contract) — 430,623
4. Charles F. Vachris, Inc., Brooklyn, N. Y. — 447,200

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Earth excav	500 c. y.	$1.00	$10.00	$5.00
2. Timber sheeting left in place	10 M.B.M.	100.00	50.00	125.00
3. Portland cement	660 bbl.	2.50	2.50	2.25
4. Concrete	440 c. y.	16.00	30.00	30.00
5. Steel reinf	2,500 lb.	.22	.20	.075
6. Misc. wrought metals	5,000 lb.	.14	.20	.20
7. Iron castings	10,000 lb.	.22	.08	.10
8. Cast iron pipe lines	L. S.	120,347.00	113,000.00	120,000.00
9. Wrought iron pipes	L. S.	37,859.00	41,000.00	42,500.00
10. Valves	L. S.	34,712.00	32,000.00	37,500.00
11. Venturi meters and registers	L. S.	45,306.00	52,000.00	50,000.00
12. Air diffuser system	L. S.	117,968.00	108,000.00	115,000.00
13. Sludge lifts and sludge level indicators	L. S.	25,968.00	29,000.00	30,000.00
14. Indicating and measuring devices	L. S.	7,228.00	8,000.00	9,500.00
15. Misc. work	L. S.	11,960.00	11,000.00	5,500.00

HIGHWAYS, TEXAS

OWNER: Texas State Highway Department, Austin, Tex.

PROJECT: Improving 16.486 miles of highways in Hill and Navarro Counties, Texas, from 1.6 miles southwest of Mt. Calm to Dawson. Pavement of concrete construction; flexible base shoulders.

CONDITIONS: Contractor to furnish all materials and complete work in 150 working days. Rail and highway transportation facilities available. Wage rates are: skilled labor, $1.00 per hr.; semi-skilled, 50c.; and common, 40c.

BIDS: Eight bids were opened November 26, 1941, ranging from the low of $375,207 to $486,532.

LIST OF BIDDERS:

1. George Kies, Inc., Austin, Tex. (low bidder) — $375,207
2. Cage Bros. & H. E. Williams, Bishop, Tex. — 392,417
3. Harrison Engr. & Constr. Corp., Kansas City, Mo. — 394,502
4. L. H. Lacy Co., Dallas, Tex. — 401,881
5. Briggs-Killian, San Antonio, Tex. — 443,426
6. Austin Road Co., Dallas, Tex. — 449,887
7. Brown & Root Co., Austin, Tex. — 457,129
8. Standard Paving Co., Tulsa, Okla. — 486,532

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Common road excavation	4,415 c. y.	$0.30	$0.40	$0.60
2. Unclass. struct. excavation	86 c. y.	1.50	1.50	2.00
3. Sprinkling	3,785 M gal.	1.15	1.00	1.15
4. Blading	426 hr.	3.00	4.00	3.00
5. Rolling	562 hr.	3.00	3.50	3.00
6. Rolling, additional	485 hr.	2.50	3.00	3.00
7. Flexible base	39,755 c. y.	1.50	1.50	1.75
8. Cutback asph. conc. pavmt. (type M)	444.3 ton	5.00	6.00	7.25
9. Prime coat (MC-1)	2,881 gal.	.15	.25	.12
10. Concrete pavement	205,714 s. y.	1.31	1.38	1.32
11. Reinforcing steel, pavement	748,580 lb.	.04	.04	.045
12. Class A concrete	35.7 c. y.	30.00	40.00	30.00
13. Reinforcing steel, other than pavmt	1,954 lb.	.05	.10	.10
14. Remove old structures	5 ea.	15.00	25.00	30.00
15. Grate	50 ea.	18.00	25.00	30.00
15. Conc. curb and gutter	83 l. f.	2.00	2.00	2.00
17. Steel plate guard fence, type 5 or 6	800 l. f.	1.50	2.60	1.60

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply — Unclassified
Sewers, Waste Disposal — Latin America
Bridges, Grade Cross'gs — Public Buildings
Streets & Roads — Commercial Buildings
Earthwork, Waterways — Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):

BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);

LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORK

Calif., Anitoch—Diesel-powered pump unit at waterfront plant, 1 m.g. pressure storage south of city limits. $45,000. F. A. Savage, city engr.

†**Calif., Fort Ord**—U. S. Eng., Fort Ord, rejected bids Dec. 30, drilling, casing wells, etc., Inv. Q.M. 6665-42-18. Will readvertise. CD 12/24.

†**Conn., East Hartford**—City, water facilities, Docket Conn. 6-182. $71,000. **DPW.**

†**Conn., New London**—Clarence M. Blair, Inc., engr., 100 Crown St., New Haven, bids soon 6,000 ft. 20 to 24-in. c.i. transite or concrete pipe-line, pump. station, gatehouse, steel standpipe, for city. Docket Conn. 6-126, $349,986. **DPW.** CD 12/24—ENR 1/1.

Ia., Buffalo—C. Zogg, city clk., WW sys. $30,000. R. W. Gearhart, Cedar Rapids, engr.

Ia., Le Claire—Ruth Barney, city clk., WW sys. $35,000. Applied to DPW. R. W. Gearhart, Cedar Rapids, engr.

†**Md., Towson**—Baltimore Co. Metropolitan Dist., 12 in. main along Taylor Ave. from Lock Raven Rd. to Jullen P. Friez & Sons plant, outskirts Baltimore. Docket Md. 18-127. $56,000. **DPW.**

†**Mass., Fall River**—City, Water Dpt., Municipal Bldg., water facilities, Docket Mass. 19-101. $410,365. **DPW.** Hayden, Harding & Buchanan, Park Sq. Bldg., Boston, consult. engrs. CD 12/30.

Mass., Milford—Town of Milford Water Co., 226 Main St., c.i. water supply main exten., South Main St., South Milford. Over $20,000.

N. J., Atlantic City—Rein.-con. headhouse and filter house, bulkheads, etc. for filtration plant, Pleasantville. $141,693. WPA. G. R. Swinton, 930 Atlantic Ave., Atlantic City, WPA engr.

N. Y., Granville—Bids soon water supply sys. $40,000. R. S. Hall, Delmar, engr. CD 11/25—ENR 11/27.

N. Y., Lockport—E. H. Gallor, mayor, City Hall, auxiliary water supply line from city to Niagara River, municipal water supply sys. Over $15,000.

†**O., Fairfield**—Village, imprv. water sys., elevated tank, iron remover plant, wells, pump house, exten. distr. lines. Docket Ohio 33-163. $44,169. **DPW.** CD 9/8—ENR 9/11.

†**O., Osborn**—Village, watermain extens., well supply, pump equip. bldg., etc., Docket Ohio 33-172. $23,600. **DPW.**

†**S. C., Charleston**—Comrs. Pub. Wks., exten. water mains approx. 20 mi. under Ashley River into St. Andrews Parish. Docket S.C. 38-113. $100,000. **DPW.**

Tenn., Dyersburg—City, c/o L. D. Hammer, mayor, filtration plant. $15,000.

†**Tex., Brownwood**—Brown County Water Imprvt. Dist. 1, exten. water supply and distr. sys., Docket Tex. 41-143. $184,000. **DPW.** J. Montgomery, Littlefield Bldg., consult. engr. CD 7/30—ENR 8/7.

†**Tex., Corpus Christi**—Nueces County Water Imprvt. Dist., WW sys. addns., extens., imprvs., near here, Docket Tex. 41-260. $48,200. **DPW.** CD 10/17—ENR 10/23.

†**Tex., Pasadena**—City, D. L. Atkinson, mayor, bids soon WW sys. imprvs., Docket Tex. 41-246, $210,000. **DPW.** Garrett Eng. Co., 2504 Audubon St., Houston, engrs. CD 12/17—ENR 1/1.

Utah, Orem (Via Pleasant Grove)—Enlarging, imprv. water sys. $175,000. Will apply for DPW funds.

Wash., Everett — Pinehurst Water Dist., new bids soon drilling well, WW imprvs. Bids Dec. 22 cancelled. Parker & Hill, Smith Tower, Seattle, engrs. CD 12/15—ENR 12/11.

†**Wash., Ilwaco**—Town, pipe lines, reservoir roof, accelator-filter plant, pumphouse. Docket 45-177. $20,000. **DPW.** Hostmark Eng. Co., Lloyd Bldg., Seattle, engrs. CD 12/17—ENR 12/25.

Wis., Loyal—L. A. Davel, village clk., preliminary survey water supply sys. F. J. Davy & Son, 502 Main St., La Crosse, engrs.

Wyo., Cheyenne—J. K. Stoddard, city clk., 5 wells, 1 m.g. steel storage tank. $40,000.

B. C., Port Alberni—Bids late in January, WW sys. imprvs. $25,000.

N. S., Halifax—Storage reservoir and main. $250,000.

★**N. S., Halifax**—City Clerk bids soon WW imprvs. $800,000. H. M. Johnston, City Hall, engr.

Ont., Toronto—St. Mary's Hospital Bd., 550 Jarvis St., water storage reservoirs, septic tanks, etc. $25,000.

Que., St. Jean de Matha—L. Marcil, municipality clk., well digging, fire protection sys., WW imprvs. $20,000.

Que., Ste. Therese—G. E. Filatrault, municipality clk., WW sys. imprvs. $25,000.

BIDS ASKED

Bids Asked About January 14

†**Fla., Eglin Field**—U. S. Eng., Federal Bldg., Mobile, Ala., 7 water tanks, Auxiliary Fields 1 to 7 (inclusive) No. 378, near here.

Bids Asked January 14

†**Md., Hyattsville** — Washington Suburban Sanitary Comn., Hamilton St., 500,000 gal. water tank, Contr. 145-W; adv. ENR 1/8.

Bids Asked January 15

†**La., Shreveport**—U. S. Eng., Vicksburg, Miss., 500,000 gal. steel elevated water storage tank, Barksdale Field.

Bids Asked January 16

†**Okla., Tulsa**—City, W. F. McMurry, Water Dpt. Engr., exten. filter house, Mohawk Park Pump Sta., four 4 m.g.d. filters, with 50 percent increase in capacity for emergency, mixing basin, etc., Docket Okla. 34-101. $218,000. **DPW.** CD 11/13—ENR 11/20.

Bids Asked January 20

Ia., Council Bluffs—N. Hansen, city c. intake bldg., Contr. 5, for WW. Burns & McDonnell Eng. Co., 107 W. Linwood Blvd., Kansas City, Mo., engrs.

Ont., Ottawa—Chn. & Members Bd. Comrs., 3 turbine driven pump. units, Queen St. pump. sta., for City. $85,000. W. E. McDonald, City Hall, engr. CD 10/17—ENR 10/23.

Bids Asked January 29

★**Tex., El Paso** — City, J. E. Anderson, mayor, water treatment plant, Tex. 42-125. $620,000. **DPW.** Headman, Ferguson & Carollo, 319 Home Builders Bldg., Phoenix, engrs. CD 12/17—ENR 12/25.

LOW BIDDERS

Calif., Los Angeles—Los Angeles Dpt. Water & Power, 207 S. Bway., Dec. 26, rein.-con. chamber for condenser circulation water pump, at Harbor Steam plant, Wilmington. Spec. 4050, from C. L. Peck, 223 W. Hellman Bldg., Los Angeles. **$215,000.**

†**Calif., Vallejo**—Defense Pub. Wks. Dir. FWA, 408 S. Spring St., Los Angeles, Dec. 30, reconditioning c.i. pipe line No. 10-RD-10 from Wailes-Dove-Hermiston Corp., 1240 Bush St., San Francisco, **$67,990;** 20 in. c.i. water line No. 10-RD-11, from Underground Const. Co., 354 Hobart St., Oakland, **$41,974.** CD 12/24.

★†**Conn., Waterbury**—Bd. Pub. Wks., City Hall, Dec. 23, dam-reservoir, Conn. 6-101, from L. G. De Felice, 51 Alston St., New Haven. **$691,375. DPW.** CD 12/2—ENR 12/4.

Tex., Abilene—W. W. Hair, mayor, impr. Lake Abilene earth filled dam, from H. Newton, Graham. **$34,440.** Freese & Nichols, Capps Bldg., Fort Worth, engrs.

†**Tex., Port Lavaca**—City, F. M. Dudgeon, mayor, Dec. 29, exten. water sys., Docket Tex. 41-217, from Bauer Smith Drilling Co., Port Lavaca. **$31,568.** Est. $34,000. CD 12/17.

†**Wash., Tacoma**—Regional Office DPW Dir. FWA, Alaska Bldg., Seattle, Dec. 23, water distr. sys., Lakewood and Tillicum Dists. south of here, for Pierce Co. Fire Dist. 2, c/o Parker & Hill, engrs., Smith Tower Bldg., Seattle, from Valley Constr. Co., 8423 48 Ave. S., Seattle. **$269,518.** CD 12/17.

CONTRACTS AWARDED

Arizona—Arizona State Fish & Game Dpt., Phoenix, 7.8 mi. pipeline to bring water to buffalo range, Houserock Valley, Coconino Co., to Tiffany Constr. Co., W. Bway. Rd., Phoenix. **$17,192.** Awarded 12/27.

★†**Conn., Waterbury**—Bd. Pub. Wks., City Hall, dam and reservoir, Conn. 6-101, to L. G. De Felice & Co., Inc., 51 Alston St., New Haven. **$691,375.** Bids 12/23. CD 12/2—ENR 1/1.

Md., Sparrows Point—Bethlehem Steel Co., Sparrows Point, water pipeline to Intercounty Constr. Corp., Hyattsville. **$75,000.** Bids 11/17. CD 11/11—ENR 11/13.

N. D., Fargo—F. F. Doherty, city aud., exten. water and sewer lines. **WPA. $161,340.** C. Jorgenson, city engr.

†**Tex., Texarkana**—War Dpt., 20 St. and Constitution Ave. N. W., Wash., D. C., c.i. water and steam distr. and power facilities lines, steam heating and ventilating sys., etc., near here, to Associated Mechanical Contractors, 2224 Summer St., Dallas, approx. **$380,000;** two 200,000 gal. elevated steel water tanks, to Pittsburgh Des Moines Steel Co., 3436 Neville Island, Pittsburgh, approx. **$110,000.**

W. Va., Alloy—Electro Metallurgical Co., Alloy, filtration plant, to Hughes-Foulkrod Co., Schaff Bldg., Phila., Pa. Est. over **$15,000.** G. Lardie, 137 4 St., Niagara Falls, N. Y., engr.

Wis., Menasha—Water & Light Comn., 468 Broad St., presettling basin, etc. 5 rein.-con. baffle walls, 160 to 300 ft. long, 700 ft. earth dike, 3,700 ft. 30 in. pipeline, to Furton Bros., Menominee, Mich., **$78,000.** Orbison & Orbison, 206 W. College Ave., Appleton, engrs. Bids 12/17.

Alta., Woodhouse—Dpt. National Defense for Air, Ottawa, Ont., water and sewerage systems, Relief Intermediate Aerodrome, to General Constr. Co. Ltd., Claresholm. **$19,000.**

Que., Mont Joli—Water sys., to Thos. O'Connell, Ltd., 1169 Ottawa St., Montreal, Que. Est. **$25,000.** Dpt. Munitions & Supply, Ottawa, Ont., engrs.

CONSTRUCTION TRENDS

Notes on significant movements in the construction industry

Federal Construction Financing Tops 8.5 Billions

DURING 1941 requests totaling $8,711,311,000 were made for government funds to carry on defense and regular departmental construction. All but 11 percent of this volume has been appropriated.

Funds for defense construction naturally play the major part, $7,587,000,000 having been asked for that program—$6,642,000,000 already appropriated, and $945,000,000 in the process of legislation. This defense volume includes money for construction in the outlying possessions as well as for continental United States.

Four important programs within the defense set-up received over one billion dollars during the year. They are the army camp and cantonment program, $1,078,923,000; war and ordnance plant construction, $1,610,980,000; Army and Naval airbase and airport work, $1,165,445,000; and shipbuilding and repair facilities, $1,232,500,000.

FEDERAL FUNDS APPROPRIATED OR IN PROCESS OF LEGISLATION FOR DEFENSE CONSTRUCTION IN 1941

ARMY CAMPS AND CANTONMENTS

Completion of cantonment program	$575,000,000
Storage facilities	67,923,000
Additional storage facilities	112,000,000
Roads, walks, parking areas, etc.	40,000,000
Army military posts	84,000,000
Air corps barracks	200,000,000
	$1,078,923,000

NAVAL BASE CONSTRUCTION (NOT AIR)

Shore establishments	$100,503,000
Shore establishments and storage	294,529,000
Shore establishments	335,000,000
	$730,032,000

ORDNANCE PLANTS

(Includes tools and equipment as well as plants)

Doubling naval ordnance plant facilities	$194,000,000
Tin smelter, etc.	12,250,000
Rolling mill	12,000,000
Lend-Lease plants (est. for plant only)	376,000,000
Munitions plants, War Dept.	549,000,000
Naval ordnance facilities (additional)	125,000,000
Steel plant expansion (D.P.C.)	154,730,000
Plants, 3rd Supplemental Def. Appr. Act	188,000,000
	$1,610,980,000

ARMY AND NAVAL AIRBASES AND AIRPORTS

Atlantic Airbases, Navy	$78,445,000
Army Airbases	70,000,000
Atlantic Airbases, Army	94,000,000
Atlantic Airbases, Army	51,000,000
Army air fields	45,000,000
Navy Air Stations	100,000,000*
Army air fields	600,000,000
C.A.A. Airports	127,000,000
	$1,165,445,000

PUBLIC WORKS IN DEFENSE AREAS

Local public works	$300,000,000
	$300,000,000

SHIPYARDS AND SHIPWAYS

Expansion of private ways	$315,000,000
Lend-Lease program ways	22,500,000
Naval shipyards, etc., and repair facilities	845,000,000*
Maritime Commission	50,000,000
	$1,232,500,000

DEFENSE HOUSING

Defense housing	$150,000,000
Defense housing	75,000,000
Defense housing	300,000,000
Defense housing	300,000,000
	$825,000,000

MISCELLANEOUS DEFENSE CONSTRUCTION FUNDS

Rivers and harbors for defense	$55,426,000
Panama Canal	149,320,000
Access Roads, military highways, repairs to existing roads	130,000,000
Office buildings	25,000,000
	$359,746,000

OTHER BILLS (NOT ENTIRELY DEFENSE)

WPA Deficiency Bill, $375,000,000 (Contains estimated 25 percent for defense construction. Municipal airports, etc.)	$93,750,000
WPA Funds for 1942, $910,905,000. (Portion to aid CAA program, military road construction, etc.)	330,203,000
Interior Department (Bureau of Reclamation, etc.)	115,085,000
Commerce Department (Civil Aeronautics Admin.)	94,978,000
Other construction	2,169,000
TVA—Dams for increased power, etc. for defense manufacturing	159,000,000
War Department—Civil	122,000,000
Independent Offices	216,000,000
Department of Agriculture	109,000,000
Federal-Aid Highways	135,000,000
Dam Construction	35,500,000

**Denotes bill in process of legislation.*

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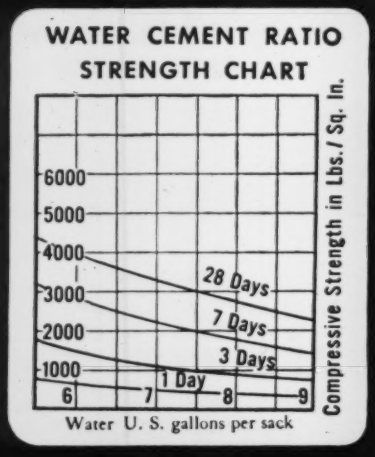
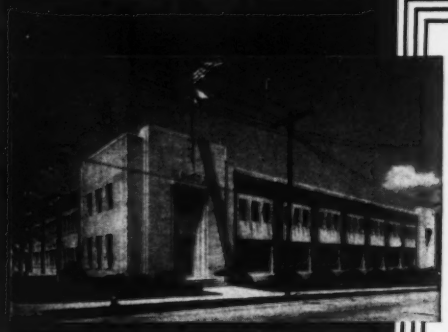
for BETTER CONCRETE

Use . . . Less Water

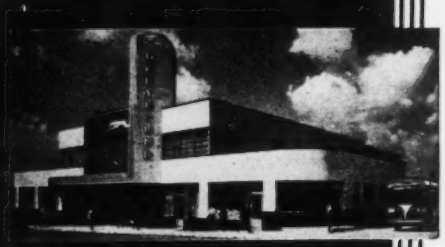
But how can you do this without impairing the workability of the concrete? Now at last there is an answer—a practical answer—



TRUSCON Zilicon WATER-PROOFING PASTE



COCA COLA BOTTLING COMPANY, ATLANTA, GA.
George H. Bond, Atlanta, Architect. Griffin Construction Company, Atlanta, General Contractors. Six tons Truscon Waterproofing Paste Used in This Construction.



SOUTHEASTERN GREYHOUND BUS TERMINAL, ATLANTA, GA.
James C. Wise, Architect. Hardin & Ramsey, Inc., General Contractors. Truscon Waterproofing Paste used here.

It has always been recognized that the use of less water in mixing concrete would provide better concrete. The reason is apparent. Water is incompressible and always occupies the same amount of space. Water evaporates, leaving the space it once occupied empty in the form of millions of tiny pores. Hence if you could use less water you would get better concrete. Through the development of a new conception of the physical chemistry of Portland cement concrete, science has provided a satisfactory answer to this problem through Truscon Zilicon Waterproofing Paste.

1. **Truscon Zilicon Waterproofing Paste allows the use of less water, at the same time improving the workability of the concrete.**
2. **It increases compressive strength.**
3. **It reduces shrinkage.**
4. **It provides marked increase in resistance to freezing and thawing.**
5. **With fixed water cement ratio it gives an increase of over 100 percent of slump.**

Truscon Zilicon Waterproofing Paste is now offered with a

25-YEAR GUARANTEE

Write for Bulletin 494 Giving Full Information

TRUSCON LABORATORIES
DETROIT • MICHIGAN

OBITUARY

A. A. HAWKINSON, a consulting engineer at Detroit Lakes, Minn., died recently. At the time of his death he was serving as city engineer.

JOHN W. KIDD, 60, dean of the school of engineering at the Texas College of Mining, El Paso, Tex., died Dec. 29. Mr. Kidd had been a member of the faculty since 1914.

WILLIAM M. JOHNSTONE, assistant commissioner of works for the city of Ottawa, Ont., died in Ottawa on Dec. 22. Mr. Johnstone graduated from Queens University, Kingston, in 1913, and worked as resident engineer on storm sewer construction in Toronto, at Coppercliff, and at Hamilton, Ont., before entering the service of the city of Ottawa.

LIEUT. COL. LLOYD COLLIS, civil engineer, expert in city planning and construction chief of the Quartermaster Corps for the Eastern District of the United States during World War I, died Jan. 2 in New York at the age of 71. Colonel Collis was educated at Columbia University, having received his civil engineer degree in 1892. He began his engineering activities as a member of the staff of the maintenance of way department of the Pennsylvania Railroad in Jersey City, N. J. He formed his own engineering company in 1903, and, among other major projects, completed the Sanderson Ave. bridge at Scranton, Pa., then the longest single-span concrete arch in the country. He also constructed a water supply system for the Military Academy at West Point.

GUSTAV DANIEL WETTERSTRAND, 50, resident engineer for the Canadian National Railways at Prince Rupert Drydock, died recently at Vancouver, B. C. Before going to Canada, Mr. Wetterstrand had extensive engineering experience in Sweden. He was a lieutenant in the Swedish army, and had worked on defense fortifications on the Swedish-Finnish border.

DANIEL BAXTER CRAIG, well known construction engineer of the Power Corp. of Canada, died Dec. 27 at Montreal.

DEAN E. FAUBERS, 46, civil engineer, died Dec. 28 at West Lafayette, Ind. Mr. Faubers constructed many roads and streets in the Lafayette area and built the Oakdale Dam near Monticello, Ind. He was a civil engineering graduate of Purdue University in the class of 1921.

CLEMENS BLANK, 66, superintendent of construction and maintenance for the Indianapolis Water Co., died Dec. 27 at Indianapolis. He had been associated with the water department since 1912.

LOUIS A. ADAMSON, 26, Twin Falls, Idaho, architect who was employed by the Morrison-Knudsen Construction Co. on defense projects at Wake Island, was killed during the Japanese invasion.

ROSS ESHELMAN, 63, well known building contractor of Anderson, Ind., died recently in that city.

EARL MINGS, building construction engineer, died Dec. 27 at Indianapolis, Ind. Mr. Mings served as Shelby county surveyor and highway supervisor from 1933 to 1936.

THEODORE ORMANEC, 24, member of the Belmont County, Ohio engineering staff, died at Kirkersville, Ohio, Dec. 13, from injuries suffered in an automobile accident.

JOHN K. JOICE, 72, retired former Chicago contractor, who handled many public works projects, died Dec. 16 in Mexico City, Mexico.

CARL SAINT CLAIR MCKINLEY, 66, well known civil engineer, died Dec. 21 at Dallas, Tex.

R. CLINTON FULLER, 86, president of the Fuller Building Co., Providence, R. I., died Dec. 15 at Providence.

GEORGE EDEL, president of George Edel, Inc., builders, at Philadelphia, Pa., died Dec. 19 at the age of 65. Mr. Edel had been a prominent Philadelphia builder for 40 years.

LEON F. MACKAY, 48, civil engineer in the copyright office, Department of Secretary of State, at Ottawa, Ont., died Dec. 24 at Ottawa.

CONTRACTS AND CAPITAL

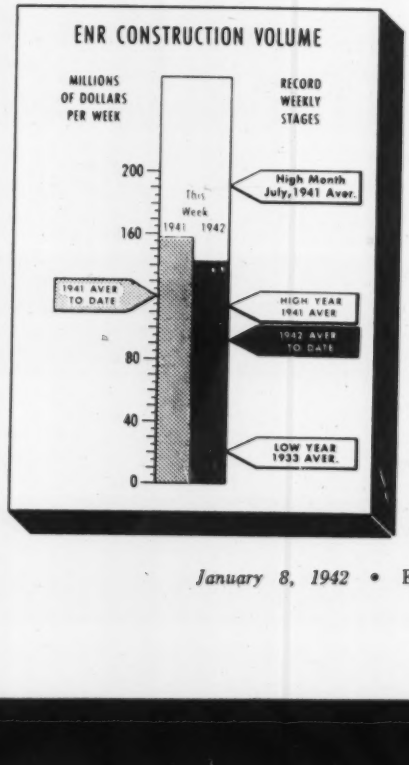
ENGINEERING CONSTRUCTION awards for the week total $141,152,000, a decline of 10½ percent from the volume for the corresponding week last year. Private awards decrease 63 percent from the 1941 week, and are responsible for the lower volume, as public construction is up 4 percent over a year ago. State and municipal construction is 45 percent lower, but federal work is 24 percent higher than in the 1941 week.

Construction volume for the first two weeks of 1942 totals $196,184,000, a decrease of 18 percent from the corresponding period last year. Private awards are 75 percent lower than in the 1941 two-week period, but public construction gains 3 percent as a result of the 21 percent increase in federal work.

In the classified construction groups, gains over last week are in waterworks, bridges, industrial, commercial and public buildings, and earthwork and drainage. Increases over the 1941 week are in waterworks, earthwork and drainage, and unclassified construction.

New capital for construction purposes for the week totals $451,169,000. This compares with $13,232,000 for the corresponding week last year. The current week's financing is made up of $1,169,000 in state and municipal bond sales, and $450,000,000 in federal appropriations from the National Defense Emergency Act of 1942.

New capital for the opening two weeks of 1942 totals $467,687,000, compared with $33,230,000 for the period a year ago.



CONTRACTS

(Thousands of dollars)

	Week Ending Jan. 9 1941	Jan. 1 1942	Jan. 8 1942
Federal	$88,285	$34,136	$101,167
State & Municipal	35,354	17,509	39,317
Total public	$123,639	$51,645	$128,424
Total private	34,184	3,387	12,728
TOTALS	$157,823	$55,032	$141,152
Cumulative 1942 (2 weeks)			$196,184
1941 (2 weeks)			$240,367

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1941 2 weeks	1942 2 weeks
NON-FEDERAL	$33,230	$17,687
Corp. Securities	4,618	...
State & Mun.	14,949	7,687
U.S.H.A. loans	12,043	...
R.F.C. loans	1,620	10,000
FEDERAL	...	$450,000
TOTAL CAPITAL	$33,230	$467,687

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Jan. '42	267.63	128.65
Building Cost	Jan. '42	217.12	117.37
Volume	Dec. '41	217	95

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

SEWAGE TREATMENT PLANT BROOKLYN, N. Y.

OWNER: City of New York, N. Y., Dept. of Public Works.

PROJECT: Structures and equipment (Contract 4) and piping (Contract 5) in connection with the 26th Ward Sewage Treatment Works, on Miller and Schenck Avenues, and the Belt Parkway, Brooklyn, N. Y. Involves construction of primary sludge gallery entrance building; air meter building; return sludge meter building; digested sludge pumping station; primary sludge gallery; preliminary settling tanks; aeration tanks; return sludge gallery; final settling tanks; sludge thickening tanks; sludge digestion tanks, including piping gallery and valve chambers; entrance tunnel to digested sludge pumping station; and appurtenances to above work; piping; mechanical equipment; backfill around tank structures; electric conduit system; and miscellaneous work.

CONDITIONS: Contractor to furnish all materials and complete work in 550 calendar days. Rail, highway and water transportation facilities available. Wage rates are: skilled labor, $1.10 to $2.25 per hr.; semi-skilled, $1.00 to $1.62½; and common, 87½¢.

BIDS: Three bids were received November 7, 1941 on Contract 4, ranging from $1,680,849 to $1,808,137. Four bids were received on the same date for Contract 5, ranging from $414,988 to $447,200. The low bidder on Contract 4, E. W. Foley, Inc., was the third low on Contract 5, but he stipulated that he would make a deduction of $46,000 if both contracts were awarded to him. This was lower than the amount considering each contract separately, and Foley was awarded both contracts about the 10th of December, $2,065,472.

Contract 4 and 5 combined

LIST OF BIDDERS:

1. E. W. Foley, Inc., Brooklyn, N. Y. (contract) — $2,065,472
2. Charles F. Vachris, Inc., Brooklyn, N. Y. — 2,106,607

Contract 4

1. E. W. Foley, Inc., Brooklyn, N. Y. (contract) — $1,680,849
2. Charles S. Vachris, Inc., Brooklyn, N. Y. — 1,704,470
3. P. Tomasetti Contracting Co., Brooklyn, N. Y. — 1,808,137

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Soil bearing tests	7 ea.	$250.00	$500.00	$300.00
2. Earth excav. above elev. 0.0	21,000 c. y.	2.30	3.00	1.00
3. Earth excav. below elev. 0.0	44,000 c. y.	2.30	3.00	2.75
4. Earth excav. in trench	500 c. y.	3.50	3.00	3.00
5. Timber sheeting left in place (not over $30.00 per M. b.m.)	30 M.B.M.	30.00	30.00	30.00
6. Wood piles	6,800 l. f.	.85	.75	1.00
7. Portland cement	43,000 bbl.	2.25	1.95	2.10
8. Natural cement	7,000 bbl.	2.50	2.60	2.75
9. Concrete	33,000 c. y.	15.00	13.00	16.00
10. Precast conc. slabs	7,600 s. f.	.30	.10	.50
11. Sheet filler exp. joints	18,000 s. f.	.20	.25	.25
12. Sheet filler and rubber comp. exp. joints	700 s. f.	.65	.65	.75
13. Copper water stops	48,000 lb.	.35	.35	.50
14. Rubbed finish	137,000 s. f.	.07	.12	.10
15. Cement floor finish	32,400 s. f.	.14	.18	.10
16. Conc. floor hardening treat	30,700 s. f.	.04	.02	.02
17. Steel reinf	5,060,000 lb.	.065	.055	.065
18. Struct. steel	158,000 lb.	.07	.11	.10
19. Misc. wrought metals—steel, plain	125,000 lb.	.16	.15	.20
20. Misc. wrought metals—steel, galv	20,000 lb.	.21	.30	.25
21. Misc. wrought metals—bronze	16,000 lb.	.75	.15	.70
22. Misc. iron castings	10,000 lb.	.08	.08	.10
23. Steel floor grating—1 in	1,850 s. f.	1.25	1.35	1.60
24. Steel floor grating—1¼ in	160 s. f.	1.50	1.59	1.80
25. Steel floor grating—1½ in	2,200 s. f.	1.67	1.80	2.00
26. Threaded pipe railing (single)	3,300 l. f.	1.35	1.50	1.75
27. Threaded pipe railing (double)	6,000 l. f.	1.90	2.00	2.50
28. Stop planks and baffles	L. S.	3,100.00	7,500.00	6,000.00
29. Sludge thickener mechanisms	L. S.	11,600.00	12,200.00	15,000.00
30. Sludge collector mechanisms	L. S.	145,000.00	137,000.00	150,000.00
31. Dry chemical feed machine	L. S.	1,415.00	1,700.00	1,500.00
32. Pumping units	L. S.	82,000.00	86,000.00	100,000.00
33. Sludge digestion tank covers	L. S.	105,050.00	120,000.00	120,000.00
34. Sluice gates	L. S.	45,000.00	55,000.00	50,000.00
35. Hoisting equip	L. S.	3,000.00	4,000.00	3,500.00
36. Indicating and measuring devices	L. S.	3,600.00	4,200.00	3,500.00
37. Slide gates	L. S.	5,500.00	4,000.00	6,000.00
38. Elec. conduits—steel	43,000 lb.	.38	.45	.40
39. Elec. conduits—copper silicon alloy	1,800 lb.	1.20	1.00	1.20
40. Elec. conduits exp. joints	1,250 lb.	2.00	2.25	2.50
41. Elec. conduits—conn. at motors	L. S.	800.00	800.00	1,000.00
42. Misc. work	L. S.	4,039.00	14,000.00	7,500.00
43. Primary sludge gallery entrance bldg	L. S.	6,850.00	14,000.00	7,500.00
44. Air meter bldg	L. S.	6,550.00	14,000.00	7,500.00
45 Return sludge meter bldg	L. S.	24,050.00	49,000.00	30,000.00
46. Digester sludge pump station	L. S.	9,650.00	13,950.00	15,000.00
47. Misc. arch. work	L. S.	7,800.00	9,000.00	9,000.00

Contract 5

LIST OF BIDDERS:

1. Harry Starkman & Bros., New York, N. Y. — $414,988
2. H. Sand & Co., Inc., New York, N. Y. — 416,650
3. E. W. Foley, Inc., Brooklyn, N. Y. (contract) — 430,623
4. Charles F. Vachris, Inc., Brooklyn, N. Y. — 447,200

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Earth excav	500 c. y.	$1.00	$10.00	$5.00
2. Timber sheeting left in place	10 M.B.M.	100.00	50.00	125.00
3. Portland cement	660 bbl.	2.50	2.50	2.25
4. Concrete	440 c. y.	16.00	30.00	30.00
5. Steel reinf	2,500 lb.	.22	.20	.075
6. Misc. wrought metals	5,000 lb.	.14	.20	.20
7. Iron castings	10,000 lb.	.22	.08	.10
8. Cast iron pipe lines	L. S.	120,347.00	113,000.00	120,000.00
9. Wrought iron pipes	L. S.	37,859.00	41,000.00	42,500.00
10. Valves	L. S.	34,712.00	32,000.00	37,500.00
11. Venturi meters and registers	L. S.	45,306.00	52,000.00	50,000.00
12. Air diffuser system	L. S.	117,968.00	108,000.00	115,000.00
13. Sludge lifts and sludge level indicators	L. S.	25,968.00	29,000.00	30,000.00
14. Indicating and measuring devices	L. S.	7,228.00	8,000.00	9,500.00
15. Misc. work	L. S.	11,960.00	11,000.00	5,500.00

HIGHWAYS, TEXAS

OWNER: Texas State Highway Department, Austin, Tex.

PROJECT: Improving 16.486 miles of highways in Hill and Navarro Counties, Texas, from 1.6 miles southwest of Mt. Calm to Dawson. Pavement of concrete construction; flexible base shoulders.

CONDITIONS: Contractor to furnish all materials and complete work in 150 working days. Rail and highway transportation facilities available. Wage rates are: skilled labor, $1.00 per hr.; semi-skilled, 50c.; and common, 40c.

BIDS: Eight bids were opened November 26, 1941, ranging from the low of $375,207 to $486,532.

LIST OF BIDDERS:

1. George Kies, Inc., Austin, Tex. (low bidder) — $375,207
2. Cage Bros. & H. E. Williams, Bishop, Tex. — 392,417
3. Harrison Engr. & Constr. Corp., Kansas City, Mo. — 394,502
4. L. H. Lacy Co., Dallas, Tex. — 401,881
5. Briggs-Killian, San Antonio, Tex. — 443,426
6. Austin Road Co., Dallas, Tex. — 449,887
7. Brown & Root Co., Austin, Tex. — 457,129
8. Standard Paving Co., Tulsa, Okla. — 486,532

Item	Quan.	Unit Prices (1)	(2)	(3)
1. Common road excavation	4,415 c. y.	$0.30	$0.40	$0.60
2. Unclass. struct. excavation	86 c. y.	1.50	1.50	2.00
3. Sprinkling	3,785 M gal.	1.15	1.00	1.15
4. Blading	426 hr.	3.00	4.00	3.00
5. Rolling	562 hr.	3.00	3.50	3.00
6. Rolling, additional	485 hr.	2.50	3.00	3.60
7. Flexible base	39,755 c. y.	1.50	1.50	1.75
8. Cutback asph. conc. pavmt. (type M)	444.3 ton	5.00	6.00	7.25
9. Prime coat (MC-1)	2,881 gal.	.15	.25	.12
10. Concrete pavement	205,714 s. y.	1.31	1.38	1.32
11. Reinforcing steel, pavement	748,580 lb.	.04	.04	.045
12. Class A concrete	35.7 c. y.	30.00	40.00	30.00
13. Reinforcing steel, other than pavmt	1,954 lb.	.05	.10	.10
14. Remove old structures	5 ea.	15.00	25.00	30.00
15. Grate	50 ea.	18.00	25.00	30.00
16. Conc. curb and gutter	83 l. f.	2.00	2.00	2.00
17. Steel plate guard fence, type 5 or 6	800 l. f.	1.50	2.60	1.60

CONSTRUCTION REPORTS

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York
ELSIE EAVES, Manager *SCOTT McLEOD, Statistician*
(Daily service also available—Write for details)

Location of ENR Correspondents

Symbols and Abbreviations Include:

† Federal Government
★ Project of $500,000 or over
ENR Engineering News-Record
CD Engineering News-Record Construction Daily

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterworks, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

Classes of Construction

(Named in order of Listing)

Water Supply — Unclassified
Sewers, Waste Disposal — Latin America
Bridges, Grade Cross'gs — Public Buildings
Streets & Roads — Commercial Buildings
Earthwork, Waterways — Industrial Buildings

Stages Reported

PROPOSED: (except Streets & Roads):

BIDS ASKED (new announcements only. For full calendar, see also preceding issues of ENR);

LOW BIDDERS: All low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

WATER SUPPLY

PROPOSED WORK

Calif., Anitoch—Diesel-powered pump. unit at waterfront plant, 1 m.g. pressure storage south of city limits. $45,000. F. A. Savage, city engr.

†**Calif., Fort Ord**—U. S. Eng., Fort Ord, rejected bids Dec. 30, drilling, casing wells, etc., Inv. Q.M. 6665-42-18. Will readvertise. CD 12/24.

†**Conn., East Hartford**—City, water facilities, Docket Conn. 6-182. $71,000. **DPW.**

†**Conn., New London**—Clarence M. Blair, Inc., engr., 100 Crown St., New Haven, bids soon 6,000 ft. 20 to 24-in. c.i. transite or concrete pipe-line, pump. station, gatehouse, steel standpipe, for city. Docket Conn. 6-126, $349,986. **DPW.** CD 12/24—ENR 1/1.

Ia., Buffalo—C. Zogg, city clk., WW sys. $30,000. R. W. Gearhart, Cedar Rapids, engr.

Ia., Le Claire—Ruth Barney, city clk., WW sys. $35,000. Applied to DPW. R. W. Gearhart, Cedar Rapids, engr.

†**Md., Towson**—Baltimore Co. Metropolitan Dist., 12 in. main along Taylor Ave. from Lock Raven Rd. to Julien P. Friez & Sons plant, outskirts Baltimore, Docket Md. 18-127. $56,000. **DPW.**

†**Mass., Fall River**—City, Water Dpt., Municipal Bldg., water facilities, Docket Mass. 19-101. $410,365. **DPW.** Hayden, Harding & Buchanan, Park Sq. Bldg., Boston, consult. engrs. CD 12/30.

Mass., Milford—Town of Milford Water Co., 226 Main St., c.i. water supply main exten., South Main St., South Milford. Over $20,000.

N. J., Atlantic City—Rein.-con. headhouse and filter house, bulkheads, etc. for filtration plant, Pleasantville. $141,693. WPA. G. R. Swinton, 930 Atlantic Ave., Atlantic City, WPA engr.

N. Y., Granville—Bids soon water supply sys. $40,000. R. S. Hall, Delmar, engr. CD 11/25—ENR 11/27.

N. Y., Lockport—E. H. Gailor, mayor, City Hall, auxiliary water supply line from city to Niagara River, municipal water supply sys. Over $15,000.

†**O., Fairfield**—Village, imprv. water sys., elevated tank, iron remover plant, wells, pump house, exten. distr. lines, Docket Ohio 33-163. $44,169. **DPW.** CD 9/8—ENR 9/11.

†**O., Osborn**—Village, watermain extens., well supply, pump equip. bldg., etc., Docket Ohio 33-172. $23,600. **DPW.**

†**S. C., Charleston**—Comrs. Pub. Wks., exten. water mains approx. 20 mi. under Ashley River into St. Andrews Parish, Docket S.C. 38-113. $100,000. **DPW.**

Tenn., Dyersburg—City, c/o L. D. Hammer, mayor, filtration plant. $15,000.

†**Tex., Brownwood**—Brown County Water Imprvt. Dist. 1, exten. water supply and distr. sys., Docket Tex. 41-143. $184,000. **DPW.** J. Montgomery, Littlefield Bldg., consult. engr. CD 7/30—ENR 8/7.

†**Tex., Corpus Christi**—Nueces County Water Imprvt. Dist., WW sys. addns., extens., imprvs., near here, Docket Tex. 41-260. $48,200. **DPW.** CD 10/17—ENR 10/23.

†**Tex., Pasadena**—City, D. L. Atkinson, mayor, bids soon WW sys. imprvs., Docket Tex. 41-246, $210,000. **DPW.** Garrett Eng. Co., 2504 Audubon St., Houston, engrs. CD 12/17—ENR 1/1.

Utah, Orem (Via Pleasant Grove)—Enlarging, imprv. water sys. $175,000. Will apply for DPW funds.

Wash., Everett—Pinehurst Water Dist., new bids soon drilling well, WW imprvs. Bids Dec. 22 cancelled. Parker & Hill, Smith Tower, Seattle, engrs. CD 12/15—ENR 12/11.

†**Wash., Ilwaco**—Town, pipe lines, reservoir roof, accelator-filter plant, pumphouse, Docket 45-177. $20,000. **DPW.** Hostmark Eng. Co., Lloyd Bldg., Seattle, engrs. CD 12/17—ENR 12/25.

Wis., Loyal—L. A. Davel, village clk., preliminary survey water supply sys. F. J. Davy & Son, 502 Main St., La Crosse, engrs.

Wyo., Cheyenne—J. K. Stoddard, city clk., 5 wells, 1 m.g. steel storage tank. $40,000.

B. C., Port Alberni—Bids late in January, WW sys. imprvs. $25,000.

N. S., Halifax—Storage reservoir and main. $250,000.

★**N. S., Halifax**—City Clerk bids soon WW imprvs. $800,000. H. M. Johnston, City Hall, engr.

Ont., Toronto—St. Mary's Hospital Bd., 550 Jarvis St., water storage reservoirs, septic tanks, etc. $25,000.

Que., St. Jean de Matha—L. Marcil, municipality clk., well digging, fire protection sys., WW imprvs. $20,000.

Que., Ste. Therese—G. E. Filatrault, municipality clk., WW sys. imprvs. $25,000.

BIDS ASKED

Bids Asked About January 14

†**Fla., Eglin Field**—U. S. Eng., Federal Bldg., Mobile, Ala., 7 water tanks, Auxiliary Fields 1 to 7 (inclusive) No. 378, near here.

Bids Asked January 14

†**Md., Hyattsville**—Washington Suburban Sanitary Comn., Hamilton St., 500,000 gal. water tank, Contr. 145-W; adv. ENR 1/8.

Bids Asked January 15

†**La., Shreveport**—U. S. Eng., Vicksburg, Miss., 500,000 gal. steel elevated water storage tank, Barksdale Field.

Bids Asked January 16

†**Okla., Tulsa**—City, W. F. McMurry, Water Dpt. Engr., exten. filter house, Mohawk Park Pump Sta., four 4 m.g.d. filters, with 50 percent increase in capacity for emergency, mixing basin, etc., Docket Okla. 34-101. $218,000. **DPW.** CD 11/13—ENR 11/20.

Bids Asked January 20

Ia., Council Bluffs—N. Hansen, city clk., intake bldg., Contr. 5, for WW. Burns & McDonnell Eng. Co., 107 W. Linwood Blvd., Kansas City, Mo., engrs.

Ont., Ottawa—Chn. & Members Bd. Comrs., 3 turbine driven pump. units, Queen St. pump sta., for City. $85,000. W. E. McDonald, City Hall, engr. CD 10/17—ENR 10/23.

Bids Asked January 29

★**Tex., El Paso**—City, J. E. Anderson, mayor, water treatment plant, Tex 41-125. $620,000. **DPW.** Headman, Ferguson & Carollo, 319 Home Builders Bldg., Phoenix, engrs. CD 12/17—ENR 12/25.

LOW BIDDERS

Calif., Los Angeles—Los Angeles Dpt. Water & Power, 207 S. Bway., Dec. 26, rein.-con. chamber for condenser circulation water pump, at Harbor Steam plant, Wilmington. Spec. 4050, from C. L. Peck, 223 H. W. Hellman Bldg., Los Angeles. $215,000.

†**Calif., Vallejo**—Defense Pub. Wks. Dir., FWA, 408 S. Spring St., Los Angeles, Dec. 30, reconditioning c.i. pipe line No. 10-RD-12, from Wailes-Dove-Hermiston Corp., 4240 17 St., San Francisco, $67,990; 20 in. c.i. water line No. 10-RD-11, from Underground Constr. Co., 354 Hobart St., Oakland, $41,974. CD 12/24.

★†**Conn., Waterbury**—Bd. Pub. Wks., City Hall, Dec. 23, dam-reservoir, Conn. 6-101, from L. G. De Felice, 51 Alston St., New Haven. $691,375. **DPW.** CD 12/2—ENR 12/4

Tex., Abilene—W. W. Hair, mayor, imprv. Lake Abilene earth filled dam, from H. Newton, Graham. $34,440. Freese & Nichols, Capps Bldg., Fort Worth, engrs.

†**Tex., Port Lavaca**—City, F. M. Dudgeon, mayor, Dec. 29, exten. water sys., Docket Tex. 41-217, from Bauer Smith Dredging Co., Port Lavaca. $31,568. Est. $34,000. CD 12/17.

†**Wash., Tacoma**—Regional Office DPW Dir., FWA, Alaska Bldg., Seattle, Dec. 23, water distr. sys., Lakewood and Tillicum Dists. south of here, for Pierce Co. Fire Dist. 7, c/o Parker & Hill, engrs., Smith Tower Bldg., Seattle, from Valley Constr. Co., 8423 48 Ave. S., Seattle. $269,518. CD 12/17.

CONTRACTS AWARDED

Arizona—Arizona State Fish & Game Dpt., Phoenix, 7.8 mi. pipeline to bring water to buffalo range, Houserock Valley, Coconino Co., to Tiffany Constr. Co., W. Bway. Rd., Phoenix. $17,192. Awarded 12/27.

★†**Conn., Waterbury**—Bd. Pub. Wks., City Hall, dam and reservoir, Conn. 6-101, to L. G. De Felice & Co., Inc., 51 Alston St., New Haven. $691,375. Bids 12/23. CD 12/24—ENR 1/1.

Md., Sparrows Point—Bethlehem Steel Co., Sparrows Point, water pipeline to Intercounty Constr. Corp., Hyattsville. $75,000. Bids 11/17. CD 11/11—ENR 11/13.

N. D., Fargo—F. F. Doherty, city aud., exten. water and sewer lines. WPA. $161,340. C. Jorgenson, city engr.

†**Tex., Texarkana**—War Dpt., 20 St. and Constitution Ave. N. W., Wash., D. C., c.i. water and steam distr. and power facilities lines, steam heating and ventilating sys., etc., near here, to Associated Mechanical Contractors, 2224 Summer St., Dallas, approx. $380,000; two 200,000 gal. elevated steel water tanks, to Pittsburgh Des Moines Steel Co., 3436 Neville Island, Pittsburgh, approx. $110,000.

W. Va., Alloy—Electro Metallurgical Co., Alloy, filtration plant, to Hughes-Foulkrod Co., Schaff Bldg., Phila., Pa. Est. over $15,000. G. Lardie, 137 4 St., Niagara Falls, N. Y., engr.

Wis., Menasha—Water & Light Comn., 809 Broad St., presettling basin, etc. 5 rein.-con. baffle walls, 160 to 300 ft. long, 700 ft. earth dike, 3,700 ft. 30 in. pipeline, to Furton Bros., Menominee, Mich., $78,000. Orbison & Orbison, 206 W. College Ave., Appleton, engrs. Bids 12/17.

Alta., Woodhouse—Dpt. National Defense for Air, Ottawa, Ont., water and sewerage systems, Relief Intermediate Aerodrome, to General Constr. Co. Ltd., Clareholm. $19,000.

Que., Mont Joli—Water sys., to Thos. O'Connell, Ltd., 1169 Ottawa St., Montreal, Que. Est. $25,000. Dpt. Munitions & Supply, Ottawa, Ont., engrs.